FEB 6 1934

FOOD INDUSTRIES

THE NEWS OF · PRODUCTION · ENGINEERING · DISTRIBUTION

BAKERY PRODUCTS

BEVERAGES

CANNED AND PRESERVED FOODS

CONFECTIONERY AND CHOCOLATE

DAIRY PRODUCTS AND ICE CREAM

FATS AND OILS

FLOUR AND CEREAL PRODUCTS

MEATS AND MEAT PRODUCTS

OTHER FOODS AND SPECIALTIES

"TUGWELL" BILL MUCH CHANGED

The Copeland bill, S.2000, replacing the "Tugwell" bill, S.1944, is published in this issue.

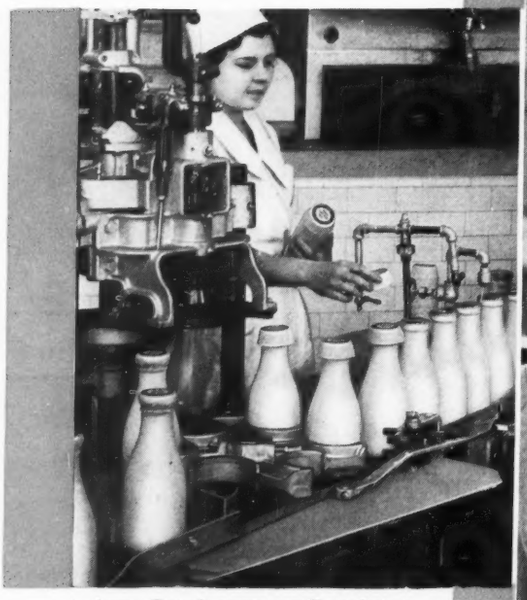
Analyze and compare it carefully with the "Tugwell" bill, published last July.

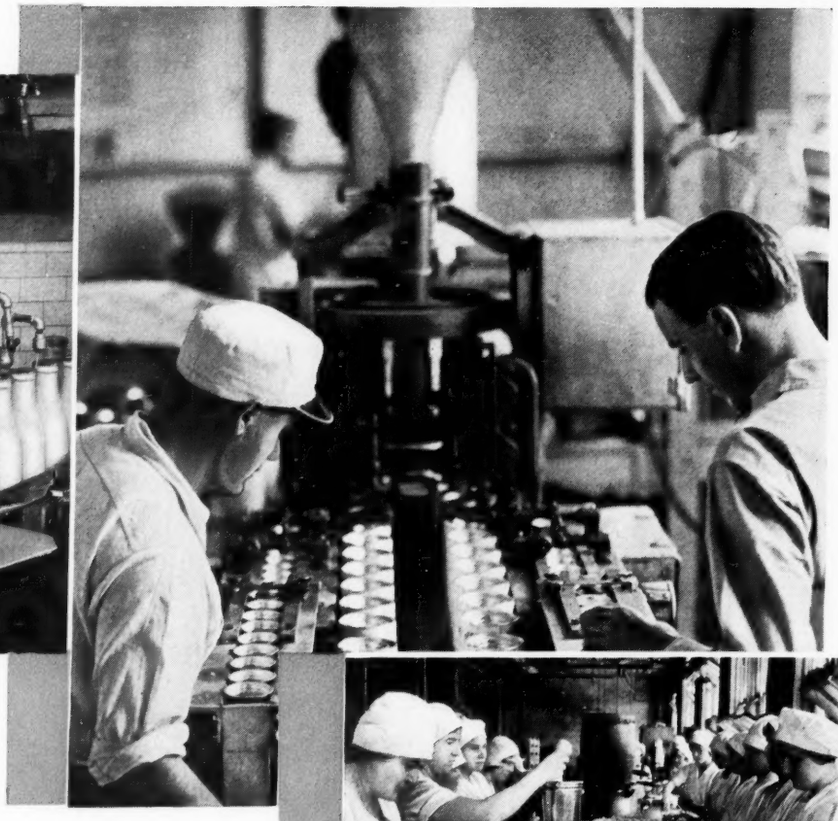
Send your views to Senator Copeland and your own members of Congress. Remember it is only a bill and may undergo further changes.

FEBRUARY 1934

McGRAW-HILL PUBLISHING COMPANY, INC.

CUT DOWN SPOILAGE LOSSES!





● ABOVE: *Bacteria counts in milk products are kept down by daily treatment of all equipment with HTH-15 solutions.*

● RIGHT: *Germ-free equipment in the canning plant . . . sprayed with HTH-15 solution.*

ABOVE: *Spoilage of meat products is prevented when all equipment, and even the operators' hands, are treated regularly with solutions made from HTH-15.*

HTH-15 . . . *makes chemical sterilization practical in food plants of every type*

The old-time steam jet, with its accompanying roar and clatter, was an impressive method of "sterilizing" food plant equipment. An ordinary observer might well think that bacteria and mold could not possibly survive such a bombardment.

But today's germicidal warfare, though less spectacular, is far more effective and economical. With HTH-15, chemical sterilization is made so easy and inexpensive that old-time methods like steam and hot water seem cumbersome and wasteful.

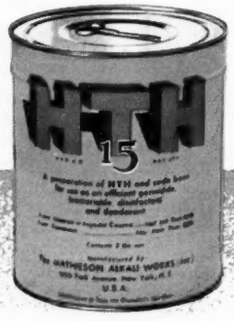
HTH-15 has a stable chlorine content that yields solutions uniformly high in germicidal efficiency. Though powerful germicides, solutions of HTH-15 are non-poisonous. And as for the danger of corrosion of metal equipment — that old bugbear of chemical sterilization—users of HTH-15 can dismiss this from their minds. For HTH-15 solutions contain an alkaline balance that makes corrosion a negligible factor.

To the large surfaces of holding tanks, tank trucks, vats, tables and floors, HTH-15 solutions are applied with a hand or power spray. Or they are flushed through pipe lines and into cans and containers. Smaller utensils, bottles, jars, etc., are sterilized by immersion. Such germicidal rinse solutions cost less than ¼¢ per gallon when made from HTH-15.

Start now to protect your products — to guard against loss of profits—with this modern way to micro-cleanliness. Order a trial case of HTH-15 (1 doz. 3-lb. cans) from your supply house today.

• • •

The MATHIESON ALKALI WORKS *(Inc.)*
250 Park Avenue New York, N. Y.



Soda Ash...Liquid Chlorine...Bicarbonate of Soda...HTH and HTH-15... Caustic Soda... Bleaching Powder... Ammonia, Anhydrous and Aqua... PH-Plus (Fused Alkali)...Solid Carbon Dioxide.

● **HTH-15 contains its own soda base and produces *sodium hypochlorite* solutions when mixed with water. A single 3-lb. can makes as much as 500 gallons of a germicidal rinse. HTH-15 is packed in 3-lb. and 1-lb. cans, one dozen to the case.**

THIS MONTH . . .

articles about — on pages

BYPRODUCT RECOVERY 52
CANNING 52
COOLING 52
DEHYDRATING 52
DISTRIBUTION 55, 77
FRYING 52
HEAT APPLYING 52
HOUSEKEEPING 66, 82
LEGISLATION 50, 56, 60, 69, 73, 75, 77, 78, 94
MAINTENANCE & REPAIR 65, 82, 94
MANAGEMENT 50, 55, 56, 60, 69, 73, 75, 77
MATERIAL HANDLING 52, 63
MODERNIZING 59
MOLD PREVENTING 66
PACKING 52
PACKAGING 63, 64
PEST CONTROLLING 66
PROCESS CONTROLLING 52
SALTING 52
SANITATION 66, 82
STERILIZING 52, 66
STORING 66
TRUCKING 59, 80
WASHING 52
WRAPPING 64

Bakery Products 66, 69, 76, 78
Beverages 50, 69
Canned and Preserved Foods 52, 69, 77
Confectionery and Chocolate 69
Dairy Products and Ice Cream 63, 69, 74, 80
Fats and Oils 50, 52, 69
Flour and Cereal Products 66, 69, 76, 78
Meats and Meat Products 59, 60, 66, 69
Other Foods and Specialties 52, 69, 78
General 50, 55, 56, 60, 64, 65, 66, 69, ... 73, 74, 78

FOOD INDUSTRIES

NEWS OF PRODUCTION • ENGINEERING • DISTRIBUTION

LAURENCE V. BURTON, *Editor* — M. A. WILLIAMSON, *Publishing Director*

Editorial Staff:
E. S. STATELER, F. K. LAWLER, New York

R. S. McBRIDE, *Washington* — PAUL WOOTON, *Washington* — LEONARD CHURCH, *Cleveland* — N. A. BOWERS, *San Francisco* — S. T. HENRY, *Spruce Pine, N. C.*

Contents for February, 1934

VOLUME 6 NUMBER 2

Continuous Broiling Eliminated Frying Problem in Sardine Canning 52
BY N. A. BOWERS

Final Decision Is Up to the Skipper 55
BY TOM W. BALFE

Works Council—Yes or No? 56
BY H. P. DUTTON

Detroit Packer Saves Money by Eliminating Outmoded Trucks 59
BY HARRY P. SPOONER

Where the Processing Tax Fails 60
BY L. V. BURTON

Multiple-Unit Bag Opener Speeds Packaging 63
BY F. K. LAWLER

Detailing the Operations of Banding a Traveling Package 64
BY FRANK H. MAYOH

Steam-Trap Trouble Shooting 65
BY S. H. COLEMAN

Systematic Housekeeping Is the "A B C" of Pest Control 66
BY HARRY STINER

Copeland Bill to the Rescue 69

Action Begins With Transfer of Food Codes to N.R.A. 73

A.A.A. Reorganizes to Wrestle With Production Problems 75

First Code Under New A.A.A. to Flour Millers? 75

Canning Industry to Allocate Production 77

Food Definitions and Standards 78

Possibilities of Truck Streamlining for the Dairy Industry 80

Editorials 49
Ideas of Practical Men 82
New Products 83
News 84
Men, Jobs and Companies 88
Business Trends 90
New Equipment 92
Manufacturers' Catalogs 93
What's on Your Mind? 94

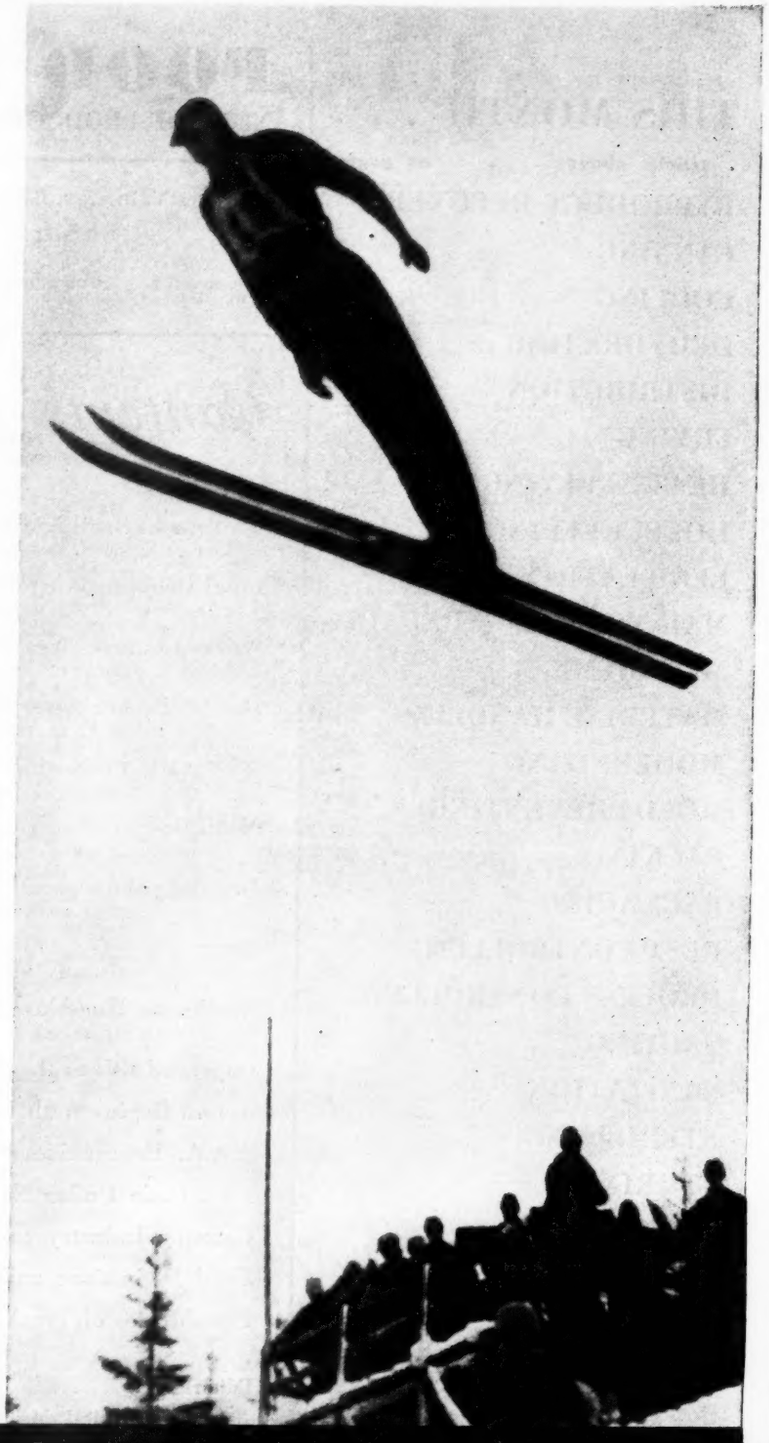
Copyright, 1934, by McGraw-Hill Publishing Co., Inc.

Contents indexed monthly in the Industrial Arts Index

FOOD INDUSTRIES. Published monthly; price 25c. a copy. Subscription rates: United States, Mexico and Central and South American countries, $2 a year. Canada, including duty, $2.50 a year. All other countries, $3 a year or 12 shillings. Entered as second-class matter April 30, 1929, at Post Office at New York, N. Y., under the act of March 3, 1879. Printed in U. S. A. Cable address: "McGrawhill, New York." Member of A.B.P. Member of A.B.C.

McGraw-Hill Publishing Company, Inc., 330 W. 42d St., New York, N. Y.

Branch Offices: 520 North Michigan Ave., Chicago; 883 Mission St., San Francisco; Aldwych House, Aldwych, London, W. C. 2; Washington; Philadelphia; Cleveland; Detroit; St. Louis; Boston; Greenville, S. C.
James H. McGraw, Chairman of the Board; Malcolm Muir, President; James H. McGraw, Jr., Vice-President and Treasurer; Mason Britton, Vice-President; Edgar Kobak, Vice-President; H. C. Parmelee, Vice-President; Harold W. McGraw, Vice-President; B. R. Putnam, Secretary.



Skill

makes muscles effective

Likewise . . . it takes skillful engineering to make even good bearings perform at their best. Just as the coordination of mental processes makes the muscles of the athlete successful, so the ingenuity of trained engineers alone can make the finest ball bearings deliver the performance that is built into them by New Departure. » » » Remember, when you select New Departure Ball Bearings, you are building into your product assured performance. Such is the inevitable result of "application engineering" born of the experience gained by ceaseless research. » » » Bring your problems to bearing engineering headquarters. The New Departure Mfg. Co., Bristol, Connecticut; Detroit, Chicago, San Francisco, London, Eng.

FOOD INDUSTRIES

Volume 6 Established 1928—McGraw-Hill Publishing Company, Inc. Number 2

THE NEWS OF PRODUCTION • ENGINEERING • DISTRIBUTION

NEW YORK, FEBRUARY, 1934

•

Laurence V. Burton, Editor

TAXES

An Official Forecast

IN HIS startling message to Congress regarding budgets, the President revealed a processing-tax policy reaching forward *at least three years.* He points out that the combined income from processing taxes during the present fiscal year, ending June 30, and the next fiscal year will be inadequate to reimburse the federal Treasury for expenditures under the crop curtailment plans which have been initiated. He therefore cites definitely the need, and the intention, to continue the processing taxes for at least a year or two longer.

• Secretary Wallace, in commenting on this situation to a representative of FOOD INDUSTRIES, frankly admitted that the tax burdens now being borne cannot be lifted without unacceptable deficits, even though crop curtailment plans should terminate fairly soon.

• One comforting fact develops. The size of the processing tax is subject to adjustment by the Secretary of Agriculture. He may—probably will—reduce these taxes as soon as it is discovered by the farmers that the tax comes out of the market price of the farm products being "relieved." That is already proved for hogs. But such a reduction in tax rate will, of course, increase the deficits; may even account for the large size of those mentioned in the budget message.

• It is not permitted under the present law to continue processing taxes beyond the end of the marketing year in which the benefit payments to farmers terminate. It would require new action by Congress to extend the burden longer than that, unless at least nominal benefit payments also are continued. Hence, if we guess that crop curtailment plans by cash benefit methods will terminate in 1935, our industries will be relieved of processing taxes in 1936. Even that seems a long time ahead. And we must be frank in admitting that Congress has ample power either by new processing taxes or by other means to extend the burden still further.

• In connection with any tax subject, however, it is of greatest importance for all industrial executives, not alone those of the food industries, to count the cost of the tremendous new public debt burdens that are being assumed at an appalling rate. In the last analysis, it will be more important to find ways for servicing the prospective federal debt of $32,000,000,000 than it will be to figure out any terminal dates for specific processing taxes. In the long run the general public welfare, which means very definitely the welfare of food manufacturers, is so largely affected by these matters of future federal tax burdens that it makes other administration policies seem small by comparison.

AS IT LOOKS TO US

Food Law Revision . . .

Senator Copeland's complete revision of the "Tugwell" bill is printed in this issue. The revised bill is S.2000. Let us always refer to it as the Copeland bill. The older Tugwell-sponsored version was S.1944. Let us always refer to it as the Tugwell bill.

The Copeland bill is a great improvement over the Tugwell bill, yet, because of its great importance to the food industries, it must be most carefully studied. Any protests or suggestions should be made promptly to your Congressman or Senators before it becomes law.

Senator Copeland's committee is to be complimented on its fairness and skill in furthering the commendable purposes of the Tugwell bill without acceptance of its objectionable methods. If still further changes are needed, they too probably can be had from so able a committee.

Preventing Rancidity . . .

Contrary to what is becoming current thinking, a container or wrapping material does not prevent or retard rancidity in oil-bearing foods simply because it is green in color. According to U. S. Patent No. 1,880,-813, assigned to the United States Government and the public by Mayne R. Coe, the wave length of the light transmitted is the important factor. The particular shade of green having superior protective qualities absorbs all light waves except those lying between 4,900 and 5,800 A.

Black, which absorbs all light waves, and foil, which excludes all light, also are protective.

If you are buying a green container or wrapper for protection against rancidity, know that it excludes all light waves except those lying between the specified limits, 4,900 to 5,800 A. If in doubt and you have no accurate way of determining the virtue of the green you desire to use, the Food Research Division, Bureau of Chemistry and Soils, Department of Agriculture, is in a position to advise or assist you. This precaution will cost you only a little time and postage. It may save you many dollars.

Food Prices Rising . . .

Despite the fact that there are many complaints from agricultural regions that prices are not rising to their satisfaction, the city man feels the increases very decidedly. In our own McGraw-Hill dining room the price of a table d'hôte luncheon has increased from 60 to 75 cents. The lower price was based on March, 1933, costs, which now show a general average increase of 34.5 per cent in the prices our steward must pay for fourteen staple items of food. These increases range from 8 per cent for beef loins to 78 per cent for flour.

Elsewhere in this issue is published a letter from a farmer of our acquaintance who complains rather bitterly about his end of the story. While it may be possible for the most intelligent to follow out all these relationships and explain the discrepancies and what becomes of the money, it is very difficult to justify it from the farmer's viewpoint.

Kudos . . .

Our compliments this month go to the National Canners' Association for its new campaign to sell canned foods to Mrs. America. This advertising campaign has a better fundamental concept and a better promotional tie-up than any other such campaign we have yet seen.

For the benefit of our non-canner readers, it should be explained that canners of Northern vegetables and fruits are up against some pretty stiff winter competition from raw vegetables and fruits from the extreme South.

Furthermore, there is an important element of competition between perishable raw and processed foods which can be stated thus: When a perishable is in competition with the same food in processed (preserved) form, the perishable usually sets the price.

The perishable has got to be sold or it spoils. Consumer advertising of the right kind, however, will help materially to maintain the volume, even if the perishables have almost to be given away.

Bad Debts . . .

Bad debt losses between January, 1929, and October, 1933, in the cracker and biscuit manufacturing group have varied from 0.03 to 0.41 per cent of sales, according to a brief investigation just completed by Food Industries at the request of one of our subscribers in the cracker baking field. The interesting feature of it is that the depression has relatively small effect on the size of losses, although there is a perceptible increase with the passage of time. One concern shows an increase from 0.03 per cent to 0.12 per cent in four years. Most important, however, is the fact that concerns having lowest losses in 1929 still show the lowest losses in 1933.

Repeal This Excise Tax . . .

Common sense and ordinary justice dictate that the federal excise taxes should be removed from the soft-drink industry. Repeal of the Eighteenth Amendment has left the bottlers of carbonated beverages in a position more awkward than when P.R.A. increased its labor costs by 25 to 40 per cent.

The top retail price obtainable is five cents. Labor has gone up. Materials have gone up. And now repeal probably has stolen a considerable portion of the soft-drink market. Many of the best known concerns are going in for alcoholic beverages, to which there can be no objection, but at best the future for the rest of the industry is very uncertain. Repeal of the excise tax is justly deserved.

Competition . . .

Those who attended the meat packers' convention in Chicago a short time ago saw an exhibit by duPont which emphasizes a contention Food Industries has been making ever since 1928, the year of our so-called birth. The exhibit was of foods

which compete with meat. Some of the meat packers were nonplussed to see other foods displayed at their convention.

Well, why not? Every food is in competition with every other food for a place on the dinner table and for a share of the consumer's dollar. The sooner all realize it, the better. No food manufacturer can safely ignore what manufacturers in other lines are doing, no matter what it may be, whether volume of production, methods, costs, packages, or materials utilized.

Bad News . . .

One swallow does not, of course, make a summer. Neither does the behavior of the women of Milwaukee necessarily foretell what the other women of the country will do. Yet there is something very disquieting in the survey recently released by Gimbel Brothers, Inc., a New York department store.

Bernard S. Gimbel wanted to know what housewives of the country thought about business recovery, how much more leisure they had under N.R.A., and what they were doing with it. Twenty-one per cent of an unstated number of women in Milwaukee who now have more leisure are spending it in "baking more pies and in general concerning themselves with their housework." New York women, however, are spending only 12 per cent of their extra time in this way.

Know Two Businesses . . .

Give a little thought to this idea while you are formulating plans and high resolves for the new year. To be successful in any walk of life, you must know two businesses: your own and your customer's.

It is not enough to be perfect in your own business, your own department or your own job, for unless you have a complete understanding of your customer's business, you will always lack that something which best enables you to fit your goods or services into his needs to give him the greatest satisfaction.

A plant superintendent must always understand the sales department's job. The better he understands it, the better he can cooperate for mutual success. Control chemists and research men must know how their services are utilized profitably in the plant. Management must know how its goods and services are utilized profitably by those to whom it sells.

For these reasons the economics of your industry and your commodities are as important to you as your own technical knowledge and skill.

Food Standards . . .

Introduction of Copeland Bill (S. 2000) into Congress on the second day of its session indicates that the present Food and Drug Act is to be revised and materially strengthened in the next few months. The provisions of this bill are much more sensible and less autocratic than those of its predecessor, known as the Tugwell Bill (S. 1944). Also it provides for the promulgation of food definitions and standards that will become the law of the land when, and if, this bill is enacted.

These definitions are to be promulgated by the Secretary of Agriculture with the aid and advice of a Committee on Public Health and a Committee on Food, and after public hearings are held on the proposed standards or changes in standards. The definitions and standards first dealt with undoubtedly will be those which have been adopted under the Food and Drug Act of 1906 for the guidance of department officials in enforcing the present law.

If you are wise you will study them and see if they can be improved and that the foods you manufacture are covered by them. As a matter of convenience FOOD INDUSTRIES is publishing the existing standards and shall publish the new, as and when adopted, if they differ from the present advisory standards. The first group of definitions appeared on pp. 26-28 of the January issue of FOOD INDUSTRIES. The second group is found on pp. 78 and 79 of this issue.

Freezing . . .

How fast is quick when applied to freezing is a question we raised in April, 1929, and, as far as we can recall, no one supplied an adequate answer until D. B. Finn, director of the Fisheries Experiment Station at Prince Rupert, B. C., clarified the problem. While he has not answered the questions categorically, he has defined the effective rate of freezing as the time taken for the center of a substance "to pass from 41 to 23 deg. F." And next he has stated that the critical rate of freezing is the slowest rate at which tissues may be frozen without breaking down cell structure. The critical rate is the slowest that may be called rapid freezing.

But, he maintains, that in itself is not enough. The frozen tissue must be cooled below the point of "denaturation" of the proteins. This condition has sometimes been called the point of irreversible dehydration of the colloids by American investigators. The phenomenon was thoroughly discussed by H. F. Taylor, FOOD INDUSTRIES, 1930 and 1931. Finn says that denaturation of fish protein is most rapid between 28.4 and 23 deg. F., but that below —4 deg. F., denaturation is negligible.

Industrial Straw Hats . . .

Among the momentous questions of the day is one which upsets our otherwise calm viewpoint almost as much as government monetary policy. And, as it is with the matter of the gold problem, we find that we lack the acumen to discover the proper solution. This problem, the answer to which we have sought so long, is what is the correct appraisal of industrial straw hats in the winter time? Every hypothetical diagnosis we have ever made is wrong.

Nevertheless, at the sight of the good old straw hat, battered and chipped, and almost black with antiquity, there always arises the memory of a quaint old New England plant—not a food plant either—where foremen, superintendents, office men, even the treasurer himself, wore battered old straws all day long in winter and summer. Although the place reeked of antiquity and old-time methods, it was notorious as a money maker.

Yet here there were no low hanging pipe lines from which bald pates needed the transient protection from painful bumps. Nor were there coolers nor refrigerators with frigid blasts to be warded off. Absent, too, was drip of condensate from overhead piping, nor were there any hot liquids to spatter and burn.

Unraveling the theory of the industrial straw hat has the charm of being an unsolvable problem, but, fortunately, it will not cost anyone sleep or money if he is wrong.

How *Continuous Broiling* Eliminated The Problems of *Continuous Frying* In SARDINE CANNING

By N. A. BOWERS
San Francisco, Calif.

THE OIL FRY was the bad actor. As commonly packed by frying in oil, the sardines had a disagreeable after-taste. They "repeated." But the fastidious trade did not repeat. Yet in those bygone days, of not so very long ago, who cared, as long as the profits were not in the canned sardines but in the inedible byproduct? When the real money was made by manufacturing fish oil and fish meal, the canned sardines could be sold at cost or even lower, and the profit on the byproduct carried the whole enterprise.

Economic conditions changed after a while, and if there were to be any profits in sardines they must come from the edible, not the inedible, products. Here was an industry that had grown from 75,000 cases in 1915 to 1,500,000 cases in 1918. The demand fell off after the War until 1922, but then rose sharply again until in 1929 it reached 3,941,000 cases. As far back as 1920, however, the more progressive canners recognized the need for improvement of the canned product. The Bureau of Fisheries studied the problem, reporting its findings in Bureau of Fisheries Document 1020 in 1927, entitled "Preparation of Fish for Canning as Sardines." But no real economic incentive for improvement existed until more recently.

And the after-taste remained. Investigators knew that this was largely caused by the operation of frying in oil, but the way to cure the problem was not as easily discovered.

The common procedure for packing sardines was to scale the fish mechanically, wash, cut, clean them, either manually or mechanically, and submerge them in brine. The salt toughened the skins, extracted part of the water by osmosis, and salted the fish flesh. Then the sardines were dried in an air-blast system, on the surfaces at least, losing from 3 to 6 per cent of their original weight.

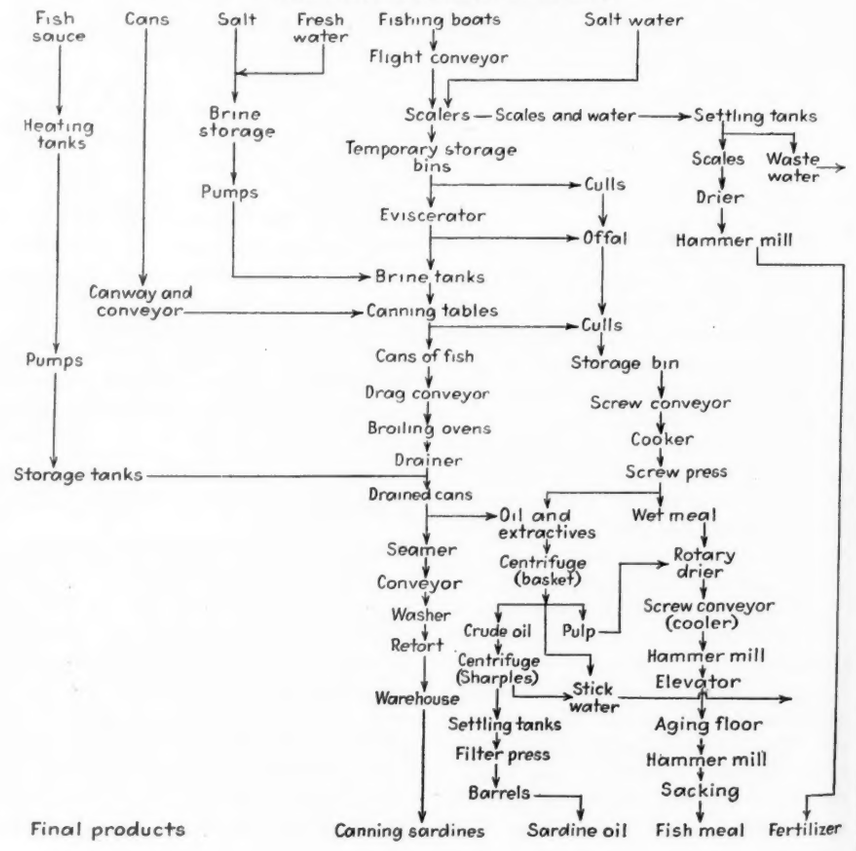
The dried fish were then put in wire baskets and passed through a tank of hot oil, 3 minutes at 217 deg. F., to fry them. And here was where the problem arose.

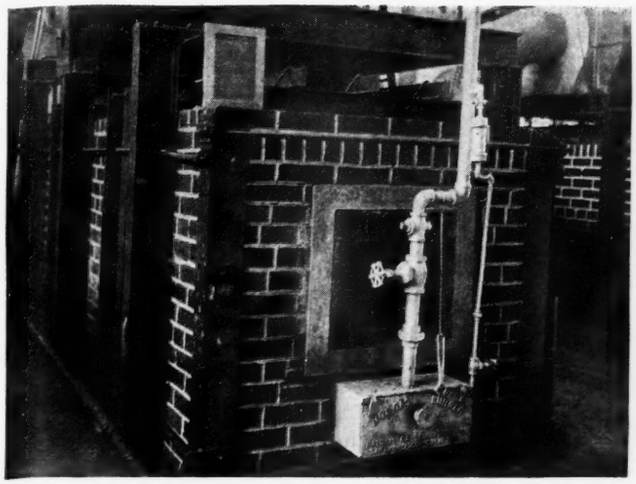
Cottonseed oil was used to start with, but as the frying continued, the bath came to contain more and more fish oil (fried out from the sardines) and less and less cottonseed oil. According to Beard, in his Bureau of Fisheries report, the bath was composed 90 per cent of fish oil after 24 hours of use and only 10 per cent of cottonseed oil. The frying extracted more oil from the fish than they absorbed during the process, so that surplus oil had to be dipped out of the tank from time to time. After frying, the fish were drained and cooled.

Subsequent operations consisted in packing in cans, exhausting, saucing, sealing, sterilizing. The oil fry, however, was the principal bad actor.

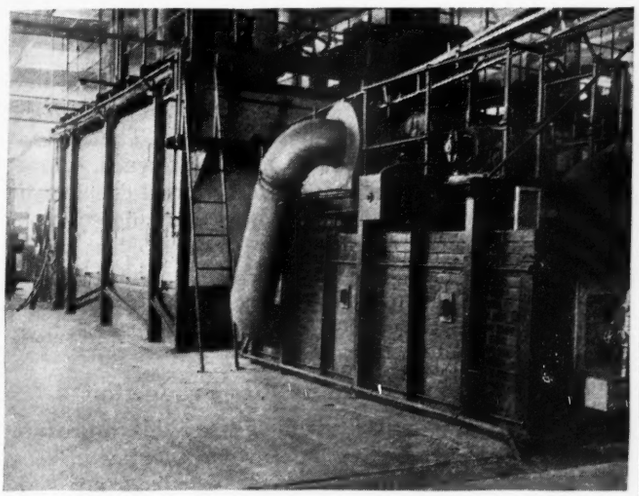
If the oil was changed daily, a very

Flow diagram of the Pittsburg (Calif.) plant of F. E. Booth Co., where broiled sardines are canned.



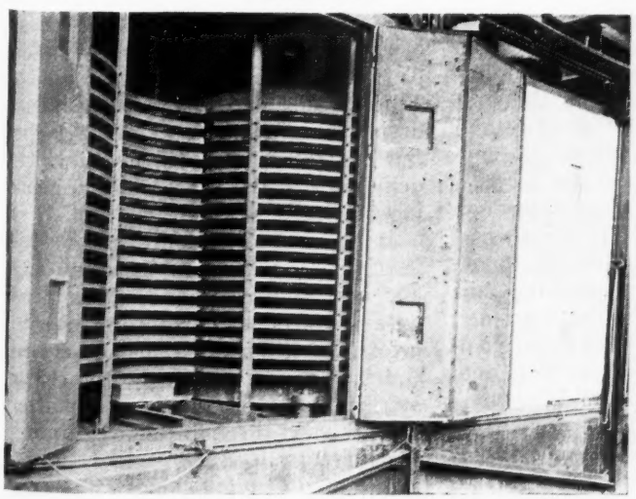


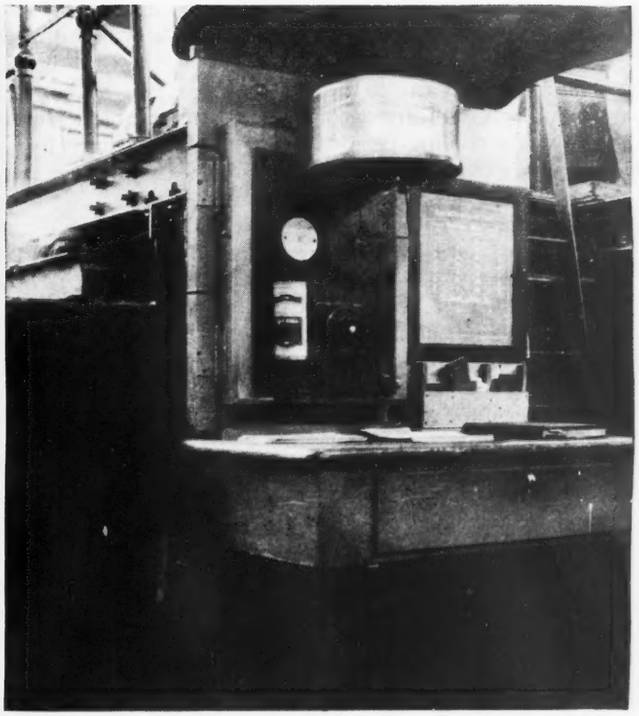
Gas-burning furnace for heating ovens.



Furnace in foreground and oven behind it. The large duct is the inlet to fan which blows the hot gases through the oven.

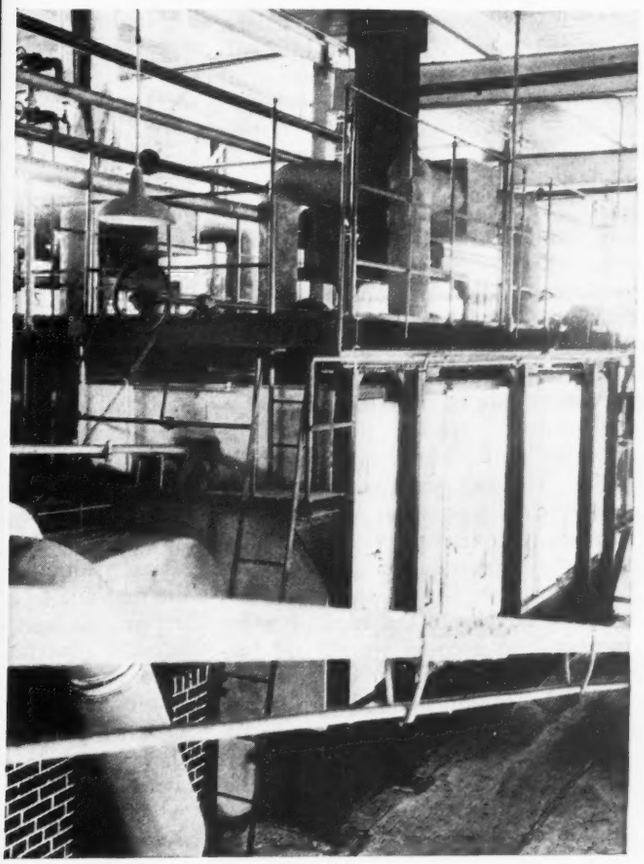
Oven with doors open, showing dome of middle revolving turret and the transfer plates. (Shop Kink: If there is a jam in the line of cans, some of them will be pushed off and drop into the box below at lower left corner. This tips the box, rings a bell and indicates the trouble on an annunciator.)





At the furnace operator's desk is a pyrometer with electrical connections to each oven and furnace. Accurate temperature control is important.

Cooled gases and moisture go up the flues above the ovens and to an exhaust stack. Cans enter oven through the rectangular opening in the end of the oven.



good pack might be obtained. Sometimes it was used far too long, with very unsatisfactory results. The trouble was largely due to the fact that sardine oil is a semi-drying oil. After the overnight cooling period, the fish were often glazed with hardened oil and stuck fast to the trays. When they were dislodged, the skin pulled off from the fish, making them not only unattractive but often worthless.

The fishy "repeat" taste was due primarily to high acid content in the frying oil and perhaps in some degree to the hardened oxidized sardine oil.

Oil-frying had one redeeming feature. It was cheap. Better methods were known, but sardines packed by the better methods could not compete on the price basis.

Technical Talent Used

About 1924, Fred J. Mullins, production manager of F. E. Booth Co., began efforts to produce a better, low-cost product, attractive even to the most fastidious. David D. Peebles, a well-known engineer of Eureka, Calif., was first consulted, and at his suggestion many experiments were carried out. Several years later, Paul D. V. Manning and Alfred H. Potbury became associated with Mr. Peebles in this work.

If the oil bath and the drying and draining periods were to be eliminated, it was likely that a more palatable product could be obtained. Also if the fish could be packed raw into the cans, the work could be done more quickly. Likewise, a more rapid method of cleaning them would be desirable. These three things: elimination of the oil bath, packing the fish raw, and improving the cleaning method, were the problems attacked by the consultants to whom the Booth company appealed. The resulting process and apparatus are protected by patents granted and pending.

At first only the cooking of the fish was studied. Among other methods, an oven containing a conveyor was built. The fish were hung by their tails to the conveyor bars, passed through the oven and then packed into cans. A beautiful product resulted, but the method was too slow and costly. However, the idea of using radiant heat seemed worthy of further development, and it was retained. Hanging the fish by their tails and then packing them into the cans meant handling them twice. If they could be placed in the cans in raw state, and can and all passed through the oven, a substantial part of the job would be accomplished. This was the method finally adopted.

From the brining tank the fish are carried by belt conveyors to the canning tables. Here they are packed into cans—four, five or six to the can, backs up. Canning is done by women who also carry out a final inspection on each fish for its condition, any rejected fish being sent to the reduction department for manufacture into meal or fertilizer. The filled cans are placed on a chain conveyor leading from the canning tables to ovens.

The improvements in eviscerating and handling equipment, while it has helped to speed up the process of canning, is not especially new. But when the cans leave the packing tables they enter a machine which is a radical departure from anything heretofore utilized in sardine canning.

It will be recalled that passing the fish through an oven was found to be a satisfactory method of cooking the fish and that the problem was to utilize the method of cooking with the fish already packed into the cans. As finally worked out the cooker consists of three revolving, vertical, bell-like turrets, driven from the top, each encircled by shelves at intervals of 6 in. or so. Between the turrets are transfer plates and around the shelves of the turrets and the transfer plates there is a guide and guard rail to keep the cans in their proper paths. The turrets all revolve in the same direction and are inclosed in an insulated sheet-metal box or oven.

In front of the oven is a furnace built of brick and fired by natural gas. Heated gases from the furnace are blown into the hollow turrets from below by fans. Over each cooking unit there is a stack to carry off cooled gases and moisture released from the fish during the broiling.

The cans of fish (pound ovals) are carried into the oven by a chain conveyor which pushes them onto the top shelf of the first turret. The continuous stream of cans forces the first can over the first transfer plate and onto the first shelf of the middle turret. (At the end of a day's run a string of dummy cans is sent through the machine to clear it.) After passing around half of the middle turret, another transfer plate puts the cans onto the first half of the third and last turret, which carries them completely around and delivers them onto the first shelf of the middle turret again, but on the side opposite from which they entered. The middle turret, in turn, delivers them to the second shelf of the first turret, from which they are carried around the same circuit but at a lower level. Thus the cans enter at the top of the oven and are gradually lowered during passage through it until they emerge at the bottom, ready for draining, saucing and sealing.

Small-scale production work had demonstrated that under certain conditions of raw material and season it was advisable to remove the cans of fish from the oven when they were partly cooked to drain out the liquid (oil and water) therein. This was carried out in the commercial unit by conveying the cans out of the oven, midway during the cook, passing through an Emmons & Gallegher drainer, and returning to the oven for the rest of the cook.

About 15 minutes is required for a passage through the oven. The exact time depends on the fish and the time of the season. During the passage the fish are cooked or, more accurately, "broiled" by dry heat. The cooked surfaces are mildly browned, sometimes crisped slightly, and droplets of fat and juice ooze out and give an appetizing odor. Some of the water in the flesh of the sardines is thus removed and has to be drained off later along with the oil that has been rendered out.

Simplifies Production

The advantages of this procedure are that no further packing in cans is necessary, the fish have not been coated with a layer of oxidized oil, and consequently the flavor has not been impaired. The speed of packing can be estimated from the fact that the oven holds 2,500 cans, each can requiring 45 minutes for a passage through it. Seven such ovens are in use at the plant of the F. E. Booth Co., Pittsburg, Calif., each with a capacity of about 3,000 cans per hour. As they leave the oven, the cans pass by means of a revolving transfer plate, to the final can drainer which automatically inverts the can and drains off the fluid and replaces the can upright on the conveyor, which delivers it to the operations of brining saucing and sealing.

In contrast to the old method, with its drying, frying, cooking, steaming and cooling operations that required around 24 hours from cutting table to retort, by the method just described the cans of fish are in the retort for sterilization in less than an hour after the fish start through the eviscerating machines.

(Turn to page 96)

FINAL DECISION *Is Up to the Skipper*

R. C. Williams & Co. learns that the sponsoring wholesaler of a voluntary chain must exercise full control or the merchandising plan is unworkable. Drops many members of its voluntary chain

By TOM W. BALFE
Vice President, R. C. Williams & Co.
New York, N. Y.

FOLLOWING the celebration of the fifth anniversary of the Royal Scarlet Stores, the voluntary chain sponsored by our company, we dropped over 60 stores from the list of cooperating retailers. Since that time I have been questioned in the trade as to the whys and wherefores of the move.

The answer is a simple one: We found, after five years of endeavor to build up a strong wholesaler-retailer chain, that many of our retailer links would not cooperate in a 100 per cent manner. Frankly, these first five years were, to a greater or lesser extent, years of experimenting, and we worked closely with every retailer to find out everything possible about the bad points as well as the good points of the plan. At the end of the five years we felt that the time had come to do some housecleaning, and that is just what we did.

Definite Policy Required

Chief among the things we learned were that the sponsoring wholesale house must insist on the following:

1. Final decision on all policies.
2. One hundred per cent and sincere cooperation by store owners.
3. Uniform store appearance.

Since we dropped the large number of stores in November, a few others have been eliminated, and for the same reason. All of these retailers forced themselves out of our plan, a plan that wiser operators realize is the link that is enabling them to meet present-day competition: (a) by the chains; (b) by the so-called super-markets.

The move was a healthy one. It gave us a forceful number of cooperating retailers, all thinking along the same lines, ready to work with us at all times, because they realize that their interests are our interests. Also, we have added numerous stores in the meantime. These stores, without exception, are of a high type. Many were prompted to become Royal Scarlet Stores because they realize we are going to insist on the highest standards.

Balance Instead of Numbers

We never aimed at a maximum number of stores. Rather, our aim is for a well-balanced chain of the better-type units, which will operate along orthodox chain-store lines. All of our members, for their own success, must think along corporation chain-store lines. They must follow fully our merchandising and policy programs and must have fairly uniform store exteriors and interiors. Their stores must be clean and attractive, well lighted with modern fixtures, and with merchandise so arranged as to produce maximum results.

Our five years of operation taught us that no wholesaler-retailer voluntary plan ever will be successful unless the wholesale house has the final decision in all major policies. We winked our eyes at this from time to time, but that period is past. From now on every retailer must first prove himself.

Our voluntary chain organization may be compared to the set-up of a ship's company. For the skipper we have the firm itself. Final decision on a ship rests with the captain. On our ship that is Arthur Williams, president. The officers are composed of our executives and an equal number of store owners, chosen by the membership at large. That is our executive committee. Merchandising and other policies are discussed once each month by this committee. Every store member is represented by his chosen delegate. But we insist, as I have said, that where there is a difference of opinion, the R. C. Williams & Co. representatives swing the decision. The crew is made up of the remaining store proprietors. It is up to them to obey orders, just as it is up to the executive committee (the ship's officers) to bow to the decision of the head of the group.

Discipline Essential

A ship without a skipper is as one without a rudder. Trouble is going to bob up sooner or later. There must be one person to be looked up to by all—and obeyed.

No corporation chain could be successful if each store manager were permitted to operate his store as he saw fit. There must be a pattern to be followed—a real operating plan. That has been the basis of the success of the corporation chains and it alone will be the reason for the success of the voluntaries.

WORKS COUNCIL ...*Yes*...OR *No?*

By H. P. DUTTON
Chicago, Ill.

• If labor is to be organized, it is better that the employer contribute constructively to the process than that he blindly nail his flag to the mast and buck the current of the times. . . . It is better that the works council or company union be undertaken in a spirit of sincere experimentation and cooperation, not as a sedative or sop to restless labor. . . . The actual thoughts and reactions of employees are very different from what some isolated and self-satisfied, if sincere, employers believe them to be. . . . Indeed, these thoughts are very much what the employer himself would be thinking in similar circumstances. . . . The men may or may not protest a sham plan, but rest assured they see through it.

ONE EFFECT of the now celebrated Clause 7 (a) of the Recovery Act has been to cause a general rush for works councils, company unions or other devices for collective bargaining with employees. Some employers, in private, are quite frank in their expectation that, with the passage of the more acute phases of the present labor situation, their plans will be allowed to die a natural death. If the wish is father to the thought—which seems more than likely—these same employers will perhaps do well to reserve judgment until they have actually lived with a works council, say, long enough to give such a plan a fair trial. There is, indeed, more than a faint possibility that they will find it worth hanging onto as a permanent working tool of scientific management.

The act specifies that no employee shall be denied the right to be represented in collective negotiations by representatives of his own choosing. There is nothing in the act to prevent the individual employee, if he chooses, from dealing direct with management, as in the past, on questions of wages and working conditions. Machinery for collective bargaining is, therefore, not required by the act, unless desired by the employees, and the setting up of such machinery is, unless the intent of the act has been misunderstood, not necessary to comply with the requirements of the law. This purpose may be that which, in the past, has caused several hundred employers to form councils or employee associations, the desire to organize a genuine self-government by consent.

More probably, many of the plans now being set up are being established in the hope that the employee, finding available a mechanism for the expression of his desires, hopes and complaints, will by that fact be deterred from being stampeded into joining or forming a trade union. This purpose is in itself a direct and sensible one. Conditions are not very conducive to calm thinking, and many employers have come to feel that at best the craft organization of the trade unions, which cut squarely across the natural lines of industry interest, is a hampering and restrictive element, while at worst, in a few cases not fairly representative of the movement as a whole, the union has developed into a criminal racket.

Should Be Sincere in Purpose

We may grant that the starting of some plan of collective bargaining through employee representation as a backfire to unionization is a sensible and legitimate step, provided it is not accompanied by forms of secret compulsion contrary to the spirit of the act. But it may be questioned whether such a step is a wholly wise one when it is undertaken with no deeper purpose than as a temporary expedient.

William Leiserson, in an address before the American Management Association in 1930, pointed out that plans for collective discussion and settlement of questions with employees have a way of growing beyond the original intent. You cannot lay a question of safety, or plant conditions, or the like on the table and say, "You are reasonable men; let us discuss this together," and then when one of these reasonable men brings up an even more pertinent question of wages or bonus or working conditions, say to him, "No, no; hands off; *I* will settle that." Your agreement may erect a dozen fences around the sacred questions, but gradually, since these defenses run contrary to common sense, management will either have to concede the point or in effect say, "We did not mean it."

What, then, is the premise that underlies the most successful of the non-union collective bargaining plans? That this premise is not merely the theorizing of "uplifters" is proved by the fact that it is advocated and defended by some of the largest businesses in the country, known for their hard-headed sticking to realities. Genuine collective bar-

Note: In a slightly longer form, this article originally appeared in the December, 1933, issue of *Factory Management and Maintenance*, of which Mr. Dutton is associate editor.

gaining, at first a rather doubtful experiment, has stuck with the larger corporations in this country. That is proof that the theory is sound and pays financial as well as social returns.

There is a very real concern among some thoughtful manufacturers about the lack of interest of employees in their work. Elaborate, meticulous and sometimes mysterious systems of wage incentives are developed at great cost which in theory ought to cause even the ice water in the factory coolers to circulate with a quicker pulse. Pep meetings are held, and notices are posted, rather in the "heavy father" style, calling on employees out of loyalty for old General International, Inc., to refrain from throwing gum around the washrooms or lunch papers on the benches. But all the exasperated owner gets is a sheepish, half-hearted cheer when the eye of the foreman roves commandingly over the meeting; a half-hearted, suspicious caginess about the new rates. Undeterred, the management goes back to devise more ingenious formulas to attach more penalties and imperatives.

It is not to be wondered at that men who are often above the average in intelligence and good sense, and always feel themselves to be, fail to become enthusiastic over jobs in which there is no remote chance to use that intelligence. Smoothly functioning production requires precision and discipline, of course, and no practical man argues that every workman should do his work as the spirit moves him. But the works council represents an attempt, more or less clearly seen and effectively worked out, to restore to the worker some measure of that sense of control of his destiny which every normal man feels.

It is true that the worker is under orders, often very specific orders, that tell him, "Move this hand first; now pull this lever; now move that hand." But with an effective works council plan he has had, by proxy of his own choosing at least, a hand in determining these orders. The reasons for their necessity have been explained, and with greater or less success relayed back to him. He has an outlet for his grievances, a listener to his ideas. The petty grafts and tyrannies, endemic and perennial among the routine supervisors in all but the most exceptional of larger industries, are no longer wholly beyond appeal. A safety valve or lightning rod has been provided for the more dangerous of the emotional tensions which so often accumulate, unknown to the higher executives, until some small incident lets loose the sudden lightning of a strike.

Courtesy of AMERICAN MACHINIST

Incentive Needed

Not very many workers nor many average citizens worry deeply or long about the processes of industrial or political government so long as these processes bring reasonably satisfactory results. Few workers are as much influenced to join labor unions by abstract consideration of the rights of fellow-workers to self-expression as by the hope that the union can get them a raise. The objection to the benevolent autocracies of industry, which prevailed in the past and are still maintained in many companies, probably comes less from the workers governed than from the student who is outside the picture. The worker accepts what he gets, if it is not too bad, and philosophically makes the best of it. The outside observer looks at the situation and sees what potentialities for productive effort lie unused, how clumsy a tool for arousing human energies is compulsion, as compared with the inner propulsion of an aroused interest.

No mechanism of management can of itself arouse this interest. Back of the mechanism must be a spirit, a purpose which makes itself felt to men who are quick to sense the lack of it. There must also be patience, for you do not change a heedless,

day-dreaming clerk or a hopeless and inert clod of a shovel wielder into an Alger hero or an industrial statesman overnight. You never will change some of them, but steadily year after year, with a works council plan of employee representation, a selected fraction of the company's most substantial and dynamic employees will be sitting in a discussion which is inherently interesting and instructive, and which implies a flattering confidence in their responsibility and judgment. It would be strange if something of this broader understanding and quickening self-respect did not percolate down and lodge permanently in the ranks. Testimony is abundant that there is, indeed, a gain in interest and the development of a valuable cooperation and initiative in the shop which uses a works council plan with this purpose in mind.

Spirit Most Important

The spirit of the plan counts for a great deal more than its form, and there are available ample and adequate accounts of successful plans.[1] A brief summary of principal points may be in order, however.

Prevailing plans are mostly of two types. Earlier experiments in imitation of the organization of the federal government, while still in use, have generally given way to simpler plans. One type of plan, with many variations, is the company union, or employees' committee or council. In this plan, employees select representatives who meet in a council, usually without the presence of management representatives, to discuss grievances of, or suggestions from, the workers they represent. A majority vote of this council is assumed to determine the position or desires of the working force on any particular question and is so conveyed as a recommendation to the management.

In this plan, only employees usually are eligible to serve on the council or committee, thus automatically excluding the professional union representative. In some plans, however, the employees are permitted, if they desire, to pay the expenses of a fellow employee who represents them. Membership in trade unions is not usually a bar to participation.

The other prevailing type of plan provides for joint representation of management and employees in one council. The number from each side may be equal, or equality of voting strength may be provided independently of numbers. Usually the chairman is appointed by management, but may be without vote. Meetings may be held monthly, or at other, preferably stated, intervals. The tendency has been to delegate most of the actual adjustment of issues coming before the council to committees such as committees on working conditions, wages, disputes, as well as on the more constructive phases of factory work such as safety or waste elimination.

With either type of plan, the usual procedure on the part of the employee is for him to take up a grievance or a request with the local representative of his craft, section of the shop, or other voting division. The representative then takes the matter up with the man's superior and endeavors to secure an adjustment. It is the usual experience that as the shop learns how to use a representation plan, the great majority of questions are settled in this stage. Failing such adjustment, the matter may be carried up successively to the superintendent, the secretary or chairman of the council, the council as a whole, or to the president of the company, and, failing settlement there, in some cases to arbitration.

Organizing a Works Council

In starting a plan, the first step usually is an announcement putting the acceptance of the idea up to the men. Announcement may be at a mass meeting, or by distribution of a printed circular, or in various other ways. It is advisable, of course, to sound out the leaders of opinion in the shop before publicly announcing a plan.

When acceptance of the plan in principle has been secured, the next step may be the nomination and election of employee representatives. At the first meeting of these representatives, the general purpose and plan of organization will be presented in more detail, and committees will be appointed to develop the bylaws and perfect the details of organization.

These bylaws ordinarily will cover such questions as jurisdiction, or matters with which the council is competent to deal; method of nominating and electing representatives and, in detail, the manner and basis of apportioning representation; the number in each voting unit of the voting divisions, whether geographical or trade, and the manner of representing small scattered groups of employees. Qualifications of voters (usually very simple) and of representatives must be defined. Time of meeting (usually on company time), compensation of representatives, and protection of representatives against reprisals by the company or its officials should be covered. The procedure in case of disagreement between council and company representatives, including the manner of arbitration, if that is included, should be outlined. Finally, the manner of amendment, or of terminating the plan, should be indicated.

Effect Upon Workers

In general, experience with such plans indicates that employees, who may have radical and impractical ideas at first, sober down rather quickly to a constructive attitude as the facts are put before them. Much more may be trusted to the discretion of a council than the average manager, inexperienced in the field of collective representation, would believe possible. The same experience has often been had, indeed, in dealing with outside unions when the attitude on the part of management has changed from unyielding antagonism to a frank discussion of common and conflicting interests, and to an effort mutually to work out the best adjustment and plan for the prosperity of all.

The case for the works council, the employees' union, or some similar plan of representation is more or less decisive in the large company, where arrogance or misunderstanding of duties on the part of subordinate supervisors may not otherwise come to the attention of management until the danger point has been passed. In the small organization the employee comes into much more direct contact with the personality and philosophy of the management, whether this be good or bad, and a formal council plan is much less necessary to supplement sound personal relations, and has less utility where these relations are not already good.

[1]The National Industrial Conference Board has published in all 9 useful reports on the subject. The publications of the American Management Association and the Taylor Society, the Labor Review of the U. S. Bureau of Labor Statistics and the intermittent publications of various personnel groups are helpful. A useful bibliography is published in Tead and Metcalf's "Labor Relations Under the Recovery Act," McGraw-Hill Book Co.

Detroit Packer Saves Money
By Elimination of Outmoded Truck Fleet

Six New Trucks Replace Eleven Old-Timers and Reduce Delivery Costs

By HARRY L. SPOONER
Detroit, Mich.

AN IDEA of economy that no money must be spent for improvements unless absolutely necessary to prevent a breakdown has been prevalent among packers and other manufacturers of food products. Here and there, however, is found some concern which recognizes the falsity of this idea. Such a concern is Hammond Standish & Co., well-known meat packers, of Detroit. This progressive firm recently gave the lie to the generally accepted idea by stepping out and buying a new fleet of six delivery trucks to take the place of eleven older models. These older models were not broken down; they had rendered good service and were still in operating condition, but they had ceased to operate profitably.

In the first place, they were heavier than necessary. Six of them were 2-tonners and five of 3½ tons capacity. All were equipped with solid tires and with two-wheel mechanical brakes. These constructional features made it impossible to operate them at a speed sufficient to cover enough territory to make their operation profitable.

The particular problem of Hammond Standish, as it is with other packers, is that of handling a constantly diminishing load. Starting out with a full load, this decreases to nothing at the end of the run. With license fees based on weight, and constantly increasing, there was no economy in hauling around a lot of dead weight. In order to secure speedier distribution at a lower cost, these eleven "klunks," or outmoded trucks, were replaced by six lighter weight units. Being provided with pneumatic tires and four-wheel hydraulic brakes, the new units make much better time and are now covering the territory formerly covered by the eleven older units, giving better service to customers and reducing delivery costs to a minimum.

The members of the new fleet are all Federal Model D four-cylinder units. Federals were chosen because of the excellent record made by the replaced trucks, of which all but one also were Federals, and because of the good service facilities maintained by the Federal company in Detroit.

The new units have a wheelbase of 154 in. The length from the back of the cab to the end of the frame is 127 in. Auxiliary springs provide for variations in load and for various conditions of the roadbed. The tires used are 6.50/20 heavy duties. These are single in front, but dual in the rear. By using these heavy duals, the rated capacity of 1½ tons has been raised to about 2 tons.

The bodies are a special open type, built to Hammond Standish specifications especially for the transportation of meat. They are metal clad and 6 ft. wide. A distinguishing feature is that the center panel on the sidewalk side is removable for loading and unloading purposes, while the opposite panel is stationary.

The ground color of the bodies is a medium chrome yellow. Upon this background appear two rectangular signs painted in black with the lettering the same as the ground color. These signs appear at the front and near the rear of the bodies, the front one containing the name of the firm

(Turn to page 76)

Distinctive in their chrome yellow paint with black signs and chrome yellow lettering, this fleet of six Federal 1½-tonners has replaced a fleet of six 2-ton and five 3½-ton solid-tired trucks formerly required by Hammond Standish & Co. in the delivery of meat products in Detroit. The elimination of outmoded truck equipment resulted immediately in a very material reduction in the company's delivery costs and an increase in territory covered.

Where the Processing Tax Fails

Why the Producer . . . not the Consumer . . . always pays the processing tax on perishables

By L. V. BURTON
Editor, Food Industries

LAST OCTOBER one of the young New Deal economists accepted my invitation to lunch at the Mayflower. He is one who has been making a scandalous amount of trouble for the luckless food manufacturers whose codes have subsequently come within his purview.

"You talked as if you believed in *laissez faire,*" he observed, when the waiter took our orders.

"I do."

"What!!! Surely you are not serious."

"With but a few reservations, I believe in *laissez faire* more than I believe in any other form of economic theory."

He looked me up and down as if I had made a coarse, low-down remark.

"How can you—a presumably intelligent man—sit there and tell me you believe in *laissez faire*?"

"The same to you, brother, and many of them."

"But, how can you justify such an attitude, even to your own conscience?"

"Oh, it's not so difficult," I said. "Let me explain, however, that I am not at all satisfied with things as they are. The trouble with you economic planners is that you cannot plan. You draw a diagram and say that this is what we must all do, and there is where we will all end. But it never works that way and we never end where you say we will . . . And, worse yet, you inflict still greater hardships on the very people you hope to help."

The New Deal economist glared wrathfully.

"If you or any other chap here in Washington can convince me that you can plan the affairs of this nation so that it will work out the way you say it will—well, when that time comes, probably I'll go along with you. The trouble with you is that you don't know people, and frequently I think you don't know your economics."

The economist seemed about to have apoplexy, but, of course, in a nice hotel, surrounded by well-dressed people, one does not shout his retort. Almost choking with emotion, he demanded, "You don't think we are going back to Hoover economics, do you?"

"I don't know."

"You bet we are not. You can put it down in your notebook that we are going in for economic planning—*from now on!*"

Of course, I have no objection to economic planning if the boys know how to plan so that the plan will work. However, there is more than a bit of grim tragedy involved in the attempts of the A.A.A. to raise the money to pay the farmers to quit producing more foodstuffs than can be eaten at home or sold abroad.

This tragedy is that the very fellow the program is designed to help is the one who is getting hurt, for the A.A.A. either ignores or is unaware of some very rudimentary economic principles which every business man knows so well that he takes them for granted. Yet this elementary knowledge has escaped the economists of the New Deal, although it cannot be said that they have not been exposed to it often.

● The one inescapable fact—the one fixed point in our whole economy—is the capacity of our stomachs to consume food. Overproduction of foodstuffs does not stimulate consumption. It only lowers prices.

● If processors of perishable foods were allowed to "take a cut" of the processing tax, they could not sell their food for prices higher than they could get for them without a tax.

● Let all well-meaning innocents be assured that if the government took over every slaughter house in the country, it could not get one cent more for the meat at retail than the public is willing to pay. And that is all that private ownership can do.

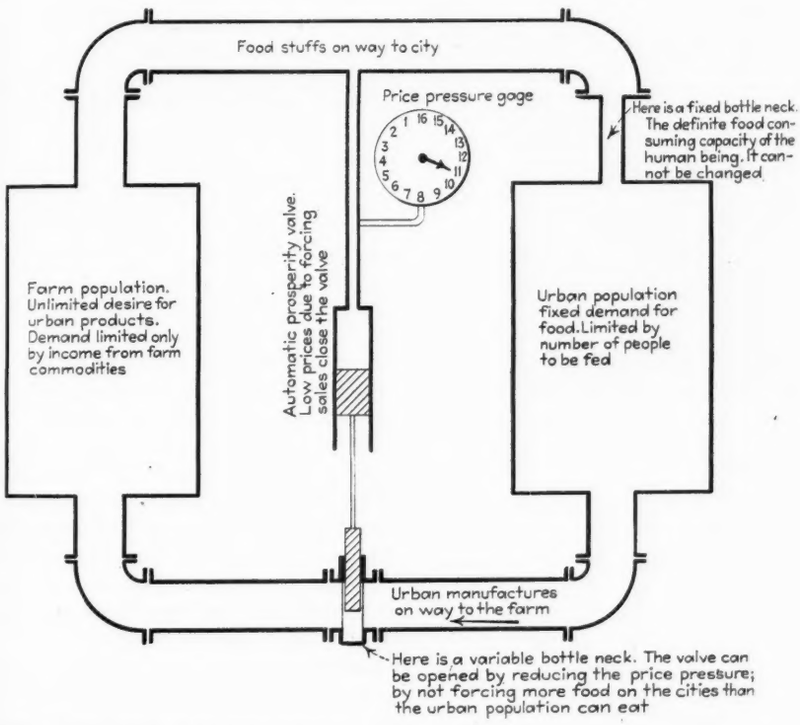
The New Deal economist apparently is still a little too far removed from the realities of life to understand facts. Facts must be given some symbolic form—mathematical representation, such as tables of carefully collected statistics—before they can become comprehensible to him. To be specific, this criticism of the A.A.A. and certain political figures is made because of a number of their recent complaints about the alleged unfairness of food manufacturers. It has been stated, for example, that meat packers are knowingly defeating the very purpose of the A.A.A. by lowering their bids on live hogs by the amount of the processing taxes —a comment that is about as absurd as anything ever uttered by educated men.

To be sure, one who knows and understands the facts and the principles on which the meat-packing

business is conducted cannot deny the truth of the statement that the bid figure is one which represents the normal bid minus the amount of processing tax. It could not be anything else. The absurdity arises out of the fact that the New Dealers were warned long in advance that this would be the case. Let anyone who doubts this statement consult the printed testimony of the hearings on the various farm relief plans which have been introduced into Congress during the past two or three years.

One thing is outstanding: The youth of Russia, but there is no need to await the day when the Tugwellian school of economics is the order of the day by a government edict.

The theory of the processing tax is that it can be added to the selling price of the processed commodity and that the consumer will have to pay it or do without the commodity, thereby proving our contention that the whole recovery program is designed to sock the consumer (but not to sock him very hard). Continuing with the theory of the processing tax, if the consumer tries to dodge the tax and purchase a substitute, the government will also tax the substitute.


Food stuffs on way to city
Price pressure gage
Here is a fixed bottle neck. The definite food consuming capacity of the human being. It cannot be changed
Automatic prosperity valve. Low prices due to forcing sales close the valve
Farm population. Unlimited desire for urban products. Demand limited only by income from farm commodities
Urban population fixed demand for food. Limited by number of people to be fed
Urban manufactures on way to the farm
Here is a variable bottle neck. The valve can be opened by reducing the price pressure; by not forcing more food on the cities than the urban population can eat

IN THIS SIMPLE DIAGRAM is illustrated the reason for most of the farm troubles and the January milk strikes. The urban population cannot enlarge its stomach. Therefore, it is up to agriculture to reduce the price pressure and thus open the automatic valve which regulates the flow of manufactured goods to the farmers.

A.A.A. economists and planners either do not understand the economics of perishable commodities or they ignore it! To expect the professional economist to be greatly influenced by these words is quite outside of realm of likelihood, but readers of FOOD INDUSTRIES can do themselves and their fellow men a great service if they will disseminate the knowledge as widely as they can. The time seems to be coming soon when every American child and adult will have to be as well schooled in economic principles as the average

In many cases, however, the consumer seems to get the foods which bear a processing tax just about as cheaply as ever, and the squeals arising from Washington on the one hand and from the hinterland on the other would be amusing were they not so pathetic.

Anyone who studies the world statistics of commodities realizes that there are gradually increasing surpluses, and sooner or later he comes to a realization that something must be done about them. If agriculture really wants to exchange its commodities for the products of urban industry, then agriculture—not just a few farmers, but all farmers—must stop giving their produce away. They must reduce production to a point where the city folks will have to pay a reasonable price for enough to eat. Otherwise, the automatic price device shown in the diagram shuts off the flow of goods from the city to the farm.

The one inescapable fact—the one fixed point—in our whole economy is the capacity of our stomachs to consume food. Overproduction of foodstuffs does not stimulate consumption. It only lowers prices. So far, I think, the A.A.A. and the food manufacturers agree.

To raise the necessary funds to buy the farmers off is, however, not so simple. The processing tax has been devised to raise the money by attempting to make the consumer pay more. It would be a splendid way to get the needed millions of dollars out of the consumer—if it worked. And if it does not work, then the processing tax comes out of the producer. The relatively few processors cannot pay it themselves. They simply do not have such a vast sum of money in their treasuries.

Of course, one realizes that the processors are expected to pass the tax along to the consumer, and be good little tax collectors. Yet, even if the processors were allowed to retain a big percentage of the processing taxes on perishables, somewhat like the scorned publicans of biblical times, they could not sell their goods for higher prices than they could get for them without a tax.

Let that idea permeate the minds of everyone in the land. Perishables are pretty much in a class by themselves. Either they must be sold and consumed or they are worthless. There is nothing strange about that. No owner of a perishable can long say, "You pay my price or you do without," for the perishable soon goes bad.

Perishables have to be sold or else manufactured into something of a non-perishable nature. This usually is a salvage operation that seldom returns a decent profit to anybody. A possible third alternative exists: dumping or making fertilizer, and that is not even a salvage operation in these days.

When perishables *have* to be sold —when the sale is forced—they will

bring only what the buyers are collectively willing to offer, and not one cent more. What the stuff cost has nothing to do with it. It may have cost 30 cents a pound and the buyer may offer only 5 cents a pound. That 5 cents is the market price. The owner can take the 5 cents a pound, or he can keep his stuff and let it turn into worthless garbage in his own possession; but if he is any sort of a business man, he takes the market price rather than suffer a greater loss by holding it too long.

About thirty years ago, a man who was then head of the Fox River Butter Co. tried to corner the butter market, but his butter began to lose quality in cold storage because he kept it too long. Forced by incipient spoilage to sell on a weak market, he lost a fortune, his job, and accumulated an appalling debt.

Effect on Pork Is Typical

Take the case of pork, about which so many complaints today are emanating from governmental and legislative sources, all to the effect that meat packers are gypping the hog raisers. The price of pork at retail is only what your wife or mine will pay. If the asked price is higher than she likes, she will not buy, and if every housewife has a similar notion about the price, the retailer has on his hands a perishable product at a price that is too high to sell. Either he can let it spoil or he can lower his price until it will sell. *And he always sells.*

When he goes to the wholesale market, however, to replenish his stock, he refuses to pay more than the price which allows him to sell with something of a profit and get rid of all of his purchase.

There may be a processing tax on the hogs, but that is of no concern to the retailer. The price he may agree to pay may represent nothing but the processing tax with nothing left over for the hog raiser. He should worry about the farmer! All he cares about is how much his retail customers will pay. He does not propose to take a loss—not if he can help it.

The wholesaler likewise has a problem of perishables, and he sells rather than let them spoil. He gets every cent he can, but he has to sell or convert the fresh meat into cured meat, which, though not so perishable as fresh meats, also must be sold at the best price obtainable. And when he replenishes his stock from the packing house, the problem of the perishable does not end.

The meat packer has to maintain a market for livestock at his stockyards, for if he should refuse to buy at all (assuming he had lost his wits) the farmers who ship their hogs to market would have to pay the cost of feeding them at the yard or of shipping them away, letting them spoil (starve) or selling to speculators. So the meat packer offers something for the hogs. He has to maintain a market or face the possibility of no hog supply at all in the near future. Whatever price is offered is nothing but a reflection of the composite of prices he is then getting from all the wholesale market to which he ships dressed or cured meats or byproducts. He will pay only as much as he is able to pay and still come out even or make a small profit. But he has a perishable which must be sold promptly.

To pay a price for hogs higher than justifiable by current anticipated or actual retail prices would entail the certainty of incurring a loss. Yet it is clearly to his interest to pay as high a price as possible, because the higher price at which he sells his meat the wider is the normal profit margin.

Producer Is Affected Most

Now let us consider the hog raiser for a moment. He, too, has a problem of perishables. When his hogs reach a certain weight—about 180 to 200 lb.—his animals are at their greatest value per pound on today's market. If he continues to feed them to still greater weight, their market value per pound is increasingly less, all because the housewife or other buyers don't particularly care for cuts from large animals.

Moreover, the heavy hogs produce a greater percentage of lard than the packer wants, although lard is only semi-perishable and does not need to be sold at once. It is possible to store lard for a considerable period of time.

So the farmer's problem of perishables is of no mean sort. If he keeps his animals, they get heavier and lose in unit value. If he starves them he may lose them altogether, and most certainly they will lose their quality. He has no choice. He must sell at whatever price they will bring at the packing house, and that price is a reflection of what the consumer will pay. And there is no way to compel the consumer to give more than she wants to pay for a staple commodity.

Now comes the fantastic economic theory of the New Deal. The A.A.A. decides to put a processing tax on hogs—a tax which today amounts to about $1.00 per hundredweight. In theory, the economic "planners" would have the consumer pay one or two cents a pound extra, just for the sake of recovery and to help agriculture. But consumers are not built that way, and neither are hogs, for the hogs dress out into cuts of considerable differences of value. Therefore, when the housewife goes to the market, instead of seeing pork chops at 16 cents a pound she might observe in a display case a card on a fine loin saying "16 cents a pound plus 7¼ cents processing tax; total 23¼ cents." It would look something like the prices on gas pumps at filling stations. Beyond that faint resemblance there is no further similarity.

Why?

Because nothing else but gas will make the car go. But there are hundreds of foods that make the human body go. The housewife is likely to say to herself, "What! Chops at 23¼ cents! Never! Not with legs of lamb at 19 cents, or beans at 8 cents."

And, what is more, she will be very likely to buy the substitute.

The processing tax means absolutely nothing to her. The lump total is the only figure that counts. And pork is a perishable. It has to be sold or it will spoil.

So the problem works back to the packing house, and the only way the packer can possibly solve it is to make his bid price for hogs equal to the normal price less the processing tax. It can't be anything else as long as the farmers send more hogs to market than can be sold at higher prices, and as long as meats are perishables.

What Is a Processing Tax Anyway?

According to the New Deal economists, a processing tax is a tax to be paid by the first processor of a commodity, and it is to be ultimately collected from the consumer. Neither A.A.A., farmers, nor politicians distinguish yet between perishables and non-perishables when railing at the failure of prices to go up because of processing taxes.

In common-sense economics, a processing tax on perishables is nothing but a tax on the producer, and it will never be anything else where perishables are involved. There also

(Turn to page 95)

Multiple-Unit Bag Opener

S-P-E-E-D-S PACKAGING

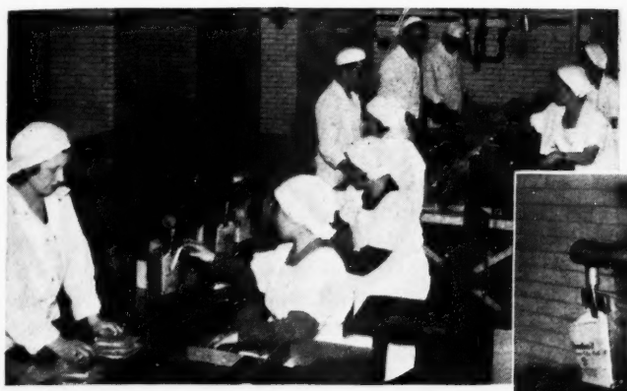


Fig. 2—At Borden's Fifth Avenue plant, the bag opener is used in packaging ice cream novelties.

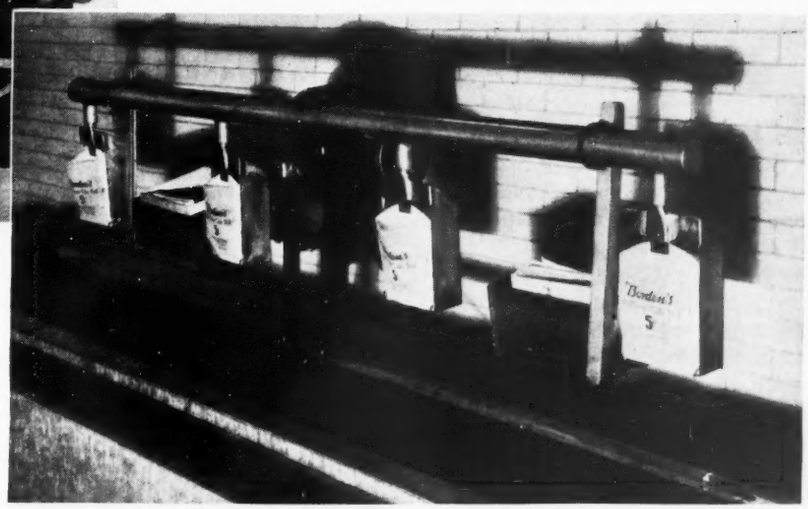


Fig. 1—There is no time wasted in fumbling with bags when this machine is used. The operator merely drops the product into the open bag, and the package falls onto a conveyor.

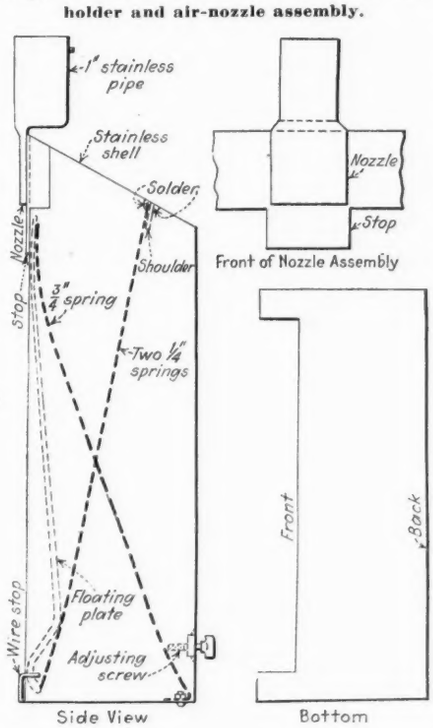
By FRANK K. LAWLER
Editorial Department
Food Industries

THREE GIRLS can sack 500 dozen ice cream sandwiches in an hour at the Fifth Avenue plant of Borden's ice cream division, New York City. It's not that the girls are especially fast, though they waste no time, but the high rate is made possible by the use of an inexpensive multiple-unit bag opener. Exhaling a zephyrlike breath, the opener blows the sides of the bags apart, and all the operators have to do is insert the sandwich and drop the package gently onto a conveyor, which takes it away.

If they happen to be handling anything less fragile than the ice cream sandwich with its easily broken cakes and soft filling, the girls merely drop the product into the opened bag and let the package fall onto the conveyor. And they make much more speed than when sacking the sandwiches.

Developed by engineers at the Borden plant and built in the plant's shops, the bag-opening machine is essentially nothing more than a series of holders that accommodate from 150 to 300 bags, and a blower that forces air through nozzles on the holders. The holders are the trick element of the machine. These consist of a shell, or box, of stainless steel which is soldered, on the front side at the top, to a flat air nozzle (Fig. 3). The nozzle, which is 1¼ in. wide with a ⅛-in. opening, is shaped from a piece of 1-in. sanitary pipe, the upper end of which connects to a drop on the blower pipe through a bayonet-type joint, permitting the bag holder to be removed easily.

Fig. 3—Side and detail views of the bag holder and air-nozzle assembly.



The shell of the bag holder may be made any size, according to the size of the bags to be handled. As may be seen in Fig. 1, the box is just wide and long enough to accommodate the bag; the depth is about 2½ in. To feed the bags forward as fast as the one under the nozzle is removed, the designers adopted a "floating" stainless steel plate that fits inside the shell and is pushed forward by springs. Fig. 3, which represents a side view of the holder, shows the shape of the plate, its position and the arrangement of the springs. It is important that the plate be shaped as shown, for the offset at the bottom compensates for the extra thickness of the bags at the bottom. An-

(Turn to page 95)

Detailing the Operations of

Banding a Traveling Package

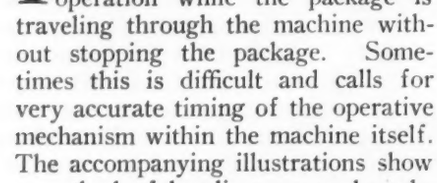
By **FRANK H. MAYOH**
Springfield, Mass.

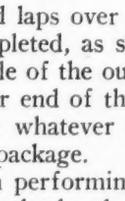
IN HANDLING packages, one of the tricks is to perform a certain operation while the package is traveling through the machine without stopping the package. Sometimes this is difficult and calls for very accurate timing of the operative mechanism within the machine itself. The accompanying illustrations show a method of banding a round package while it is traveling. In actual practice this method was developed to band a package which had been previously wrapped in wax paper.

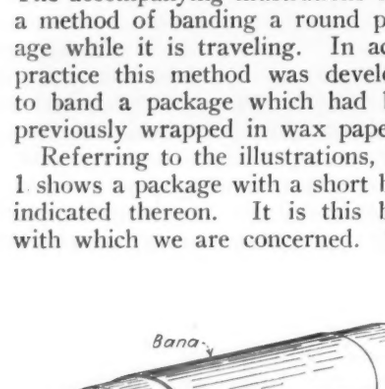
Referring to the illustrations, Fig. 1 shows a package with a short band indicated thereon. It is this band with which we are concerned. The band laps over when the operation is completed, as shown in Fig. 2. The inside of the outer lap is glued to the other end of the band, as there is no glue whatever holding the band to the package.

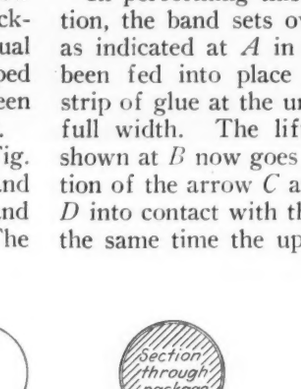
In performing this banding operation, the band sets over the package as indicated at *A* in Fig. 3. It has been fed into place with a narrow strip of glue at the under side for its full width. The lifting mechanism shown at *B* now goes up in the direction of the arrow *C* and lifts package *D* into contact with the band at *E*, at the same time the upper plunger, *F*, comes down and the package with the band is gripped between the two plungers as indicated in Fig. 4. Both plungers now go up in the direction of arrow *G* (Figs. 4 and 6), carrying the package past two roll mechanisms, *H* and *J* (Figs. 5 and 6), the function of which is to roll the band around the package. For this purpose the feed is toward the center of the package as it is lifted up. During this operation the band naturally assumes the position indicated at *K* (Fig. 4).

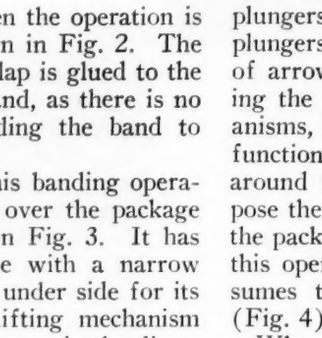
When rolling the band around the package it is necessary, of course, to keep the band section below the center of the package clear of any lift-

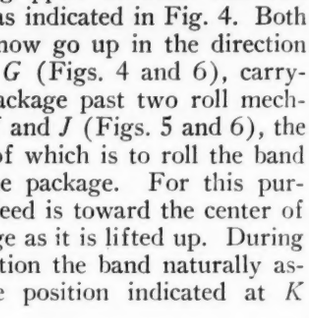


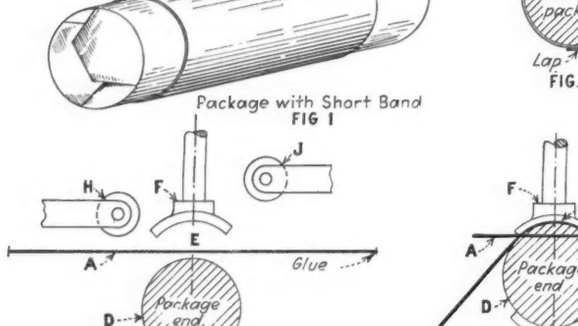


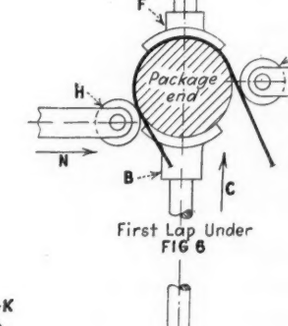


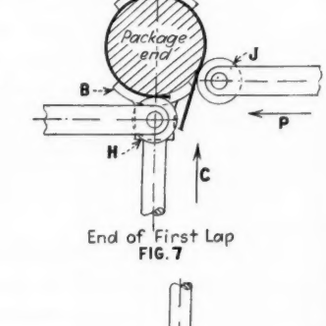












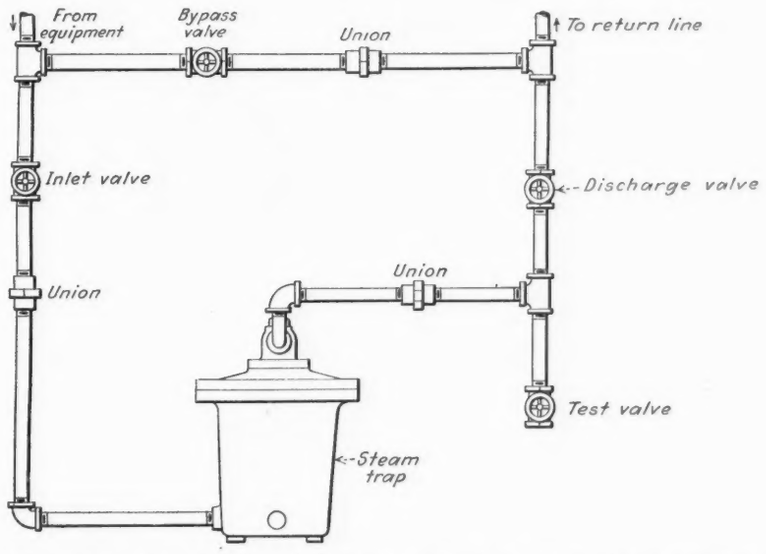
ing mechanism; therefore reference is made to Fig. 5, where it is seen that the upper plunger, *F*, fits over the band for its entire length, thereby holding it tight on the package. The lifting plungers, *B*, are two in number, one being placed at each end. This permits the rolls, either *H* or *J*, to cover the full band width. These rolls revolve in bearings at *L* and *M* and the bearings form part of a slide mechanism.

The operative functions so far described and indicated in Figs. 1, 2, 3 and 4 are the arrangement of the mechanism at the "start of cycle" and the "first contact point," while four other positions are shown by Figs. 6, 7, 8 and 9. Fig. 6 is the "first lap under" position. As plungers *B* go up in the direction of arrow *C*, with plunger *F* holding the band, the roll unit *H* feeds to the right in the direction of arrow *N* until it contacts with the package as it goes up. While the package is going up, the unit *H* continues in toward the center of the package, thereby rolling the band around until it assumes the position shown in Fig. 7, where the other roll unit, *J*, feeds to the left in the direction of arrow *P* until it contacts with the package and rolls the other end of the band over the first lap, thereby sticking the second lap to the first. The mechanism has now assumed the position shown in Fig. 8, where it will be noted that roll unit *H* has receded and that the package has been lifted clear of the first lap roll, *H*, in its upward travel.

At this position the lower plunger, *B*, has ceased its upward travel and there is clearance shown between it and the package. This plunger is now about to travel down in the direction of arrow *R* to its starting point.

At this time another operative mechanism comes into play, the purpose of which is to push the package out of line with the lifting plungers *B* and *F* and into a delivery chute; this is indicated at *S* and the package travels in the direction of arrow *T*, as shown in Figs. 8 and 9. Referring particularly to the arrangement in Fig. 9, the package is shown with the pusher *S* forcing the package over roll unit *J*, partly clear of *F* and with *J* ready to return to its starting point, where it is followed up by *S* to eject the package into the delivery chute (not shown) and out of the machine. During this last cycle the plungers *F* and *B* have returned to their normal starting point ready to elevate another package.

Steam-Trap
TROUBLE SHOOTING



When steam traps are operating satisfactorily they pass condensate readily and hold back steam without interfering with operations under temperature control. For cooking operations they must allow quick removal of large volumes of air and have ample condensate capacities at low pressures.

By S. H. COLEMAN
Roanoke, Va.

IN A LARGE number of plants steam traps are a constant source of trouble. These troubles are, in a great number of cases, due to an improper understanding of just what the steam trap is doing. A simple, visual method of determining whether a trap of the bucket or inverted bucket type is operating properly is the installation of a test or free-blow valve in the discharge line of the trap, as shown in the illustration. If this valve is opened with the bypass and discharge-line valve closed, the action of the trap is made visible and any faults which are present may be easily seen.

For example, if a steady flow of steam comes from the free-blow valve, either the mechanism of the trap is not functioning, due to some mechanical difficulty or to the presence of scale, or the trap valve is leaking. In any case it indicates that the trap should be opened and inspected.

Should a steady flow of condensate come from the test valve, the trap is either too small to handle the condensate from the equipment being drained or the orifice is improperly sized. If the trap operates intermittently with no appreciable blowing of steam between discharges, the trap is operating properly. In any case care must be taken not to mistake the flash steam from the condensate discharge for leakage, as in most cases a certain quantity of steam will flash from this water, due to its temperature being higher than the boiling point.

Should no discharge occur, trouble from an obstruction in the line leading to the trap, an obstruction in the trap, or air binding is indicated. If the trap operates satisfactorily with the test valve open and fails to operate with the test valve closed, the trouble is in the discharge line. This trouble may be due to an obstruction in the line, or to the line being too small. Either will cause excessive back pressure against the trap discharge.

Systematic Housekeeping

is the "A-B-C" of PEST CONTROL

By **HARRY STINER**
Albany, N. Y.

• In the first two articles (FOOD INDUSTRIES, December and January) of his series on cutting losses and wastes during the storing and handling of raw materials in food plants, Mr. Stiner has discussed the rôle of air conditioning and transportation practices. Beginning with this issue he goes more specifically into the subject of pest control, which will be exhaustively dealt with in a "baker's-dozen" article series.

Mr. Stiner is an entomologist with a thorough basic training and a wide commercial experience both in the United States and abroad. Until recently he was in charge of pest control work for a large baking organization with plants operating throughout the North American Continent under widely varying conditions. He knows his "bugs" and rodents.—EDITOR.

IN A GENERAL SENSE food plants universally are meccas for at least one species of about every type of storage pest from rats down to bacteria. Perhaps no one plant can—shall we say—boast of having the entire list as its guests; in fact, very few could produce a majority of them if they tried. Nevertheless, food is food and wherever it is so also are the pests; usually in inverse proportion to the effort made to eliminate them.

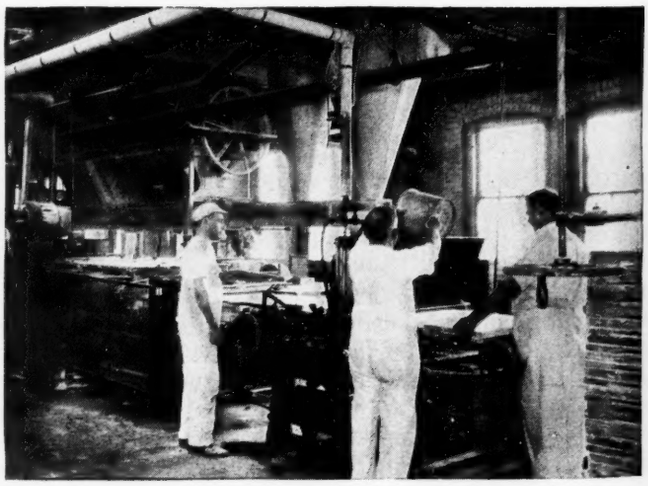
The ever-present bacteria or microorganisms as a group (bacteria, molds, yeasts), whether in a food plant or elsewhere, are always ready and waiting to multiply when placed in a favorable environment—to send things back to whence they came, as it were. Pill bugs crawl around in the damp uncared-for places; big spiders spin their webs above them; while little spiders—mites, if you like—multiply by the million in a host of different foodstuffs, if you let them. Millipeds—thousand-legged worms—and centipedes weave in and out of the trash in dark, neglected corners; while all through the plant, night and day, dry or moist, an army of various and sundry insects, that seem to spring from nowhere, are always ready to take command whenever there is a lull in the battle against them. Then come the rodents—those universal enemies of mankind. They build their nests in the walls, in the foodstuffs; gnaw holes in containers; burrow under foundations; and add naught to the good of the world.

For any food plant to avoid all of these pests is impossible; to ignore them is calamity. To combat them in a half-hearted or unsystematized manner is not only a waste and extravagance from a labor point of view but is most certain to result in a distinct material loss and in the production of irregular quality products.

Pest control is only too often con-

No lurking dangers here. Abundance of light, well-dusted surfaces, clean floors, and orderly piled bags of flour indicate careful housekeeping.

Poorly lighted, dust-laden sections of a plant are excellent locations for the laying of moth eggs and the spinning of spider webs.



Pests are a reality in any plant; to ignore them in a food plant is to invite a calamity. Slovenly housekeeping gives them ample opportunity to multiply and to carry on their destructive work

sidered much apart from food manufacture. This attitude is natural, however, and in part justifiable. People as a whole do not appreciate their food if they know or even believe that some pest has beat them to it. Workers in a food plant are human. They usually look upon the food they make as the food they eat; and while it would often be much easier and better to destroy the pests they know are there, that perfectly human tendency to close their eyes and ignore them frequently prevails.

Responsibility Essential

As stated previously, pests cannot be successfully controlled in a half-hearted or unsystematized manner. If the responsibility is not placed with the one who will actually do the work, or at least directly supervise it, no better results can be expected than would obtain under similar procedure in other branches of the plant work. The pests in any plant are a reality. They are not there to destroy themselves, nor will any amount of human hatred or disgust ever discourage them. They must be killed or they will do their part. To detail an employee whose already overindulged duty is handling food materials or running a machine, or to give an overworked janitor the additional duties of a "pest control man," when perhaps he doesn't know a bug from a mouse—and cares less—is asking more of the grand old order of economics than any plant can ever hope to obtain. Pest control is just as much of an operation as any other branch of the food plant and must be done just as consistently and intelligently, or someone pays. Although the increase with each individual pest is periodic, their great numbers and their many varieties make their progress a daily affair and must be treated as such. They take no time off for holidays.

The value of pest control should not be calculated on the time spent in the work nor the amount of control materials used but wholly on results obtained; and if the damaging effects of pest-infested goods, to say nothing of the actual losses in materials, is considered, the employee who directly eliminates these faults will be rated of far more importance in the average food plant than just a worker.

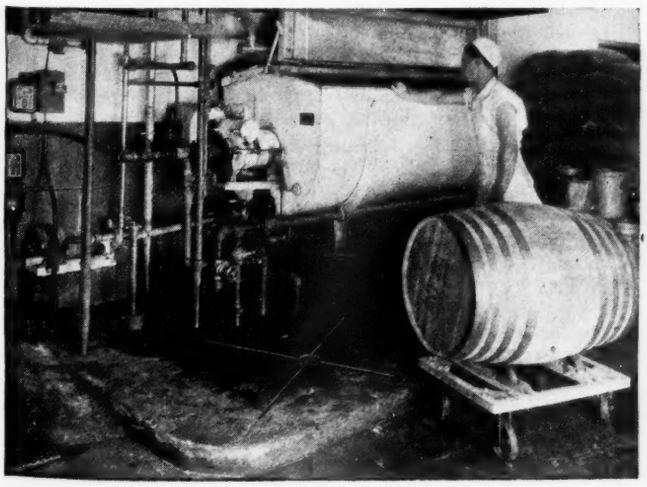
To check the thoroughness of pest-control work after it has been done or to expect a man to do conscientious work unless he is directly responsible is not only impracticable but uneconomical; and unless the one who has control of his operations is a specialist—which seldom obtains in a food plant—it is far better to remove that supervision from the operator's shoulders and leave him free to exercise his own ingenuity. After all, the two main qualifications in the operator for pest-control work are sincerity and common sense; and neither of them is ever at its best when subjected to inexpert supervision or divided among other duties which may supersede.

Sanitation

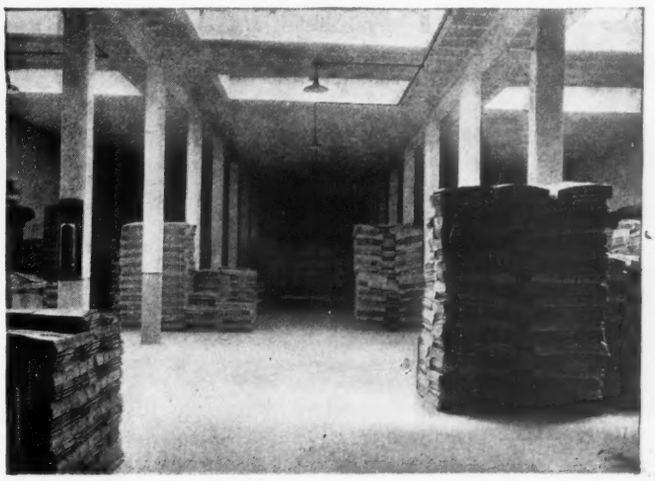
The most important part of pest-control work in food plants, regardless of the pest or pests sought, is sanitation. Each and every pest requires food and water just as surely as we do, and if left unmolested each one will develop in proportion to the amount of its particular requirements found in the plant. To destroy the pests as they appear and leave their food supply undisturbed or unprotected—whether this "food" be edible material or just plain dirt—most certainly leaves the way open for immediate reinfestation, and a continuation of its ill effects to all incoming materials.

Foodstuffs infested with insects or mites are not only reduced in volume by the pests but the remaining portions are transformed into favorable mediums for development of molds, bacteria and yeasts, which in turn rapidly reduce their condition to decay and fermentation. This same condition will occur in all foodstuffs, whether incorporated within the finished products or scattered about the floor, and the contamination of any one exposed material can be perma-

Well-drained floors encourage thorough cleaning up after wet-process operations. Clean, dry surfaces discourage insect visitation and prevent bacterial multiplication.



Shipping containers stocked in small quantities and in an orderly manner make poor nesting places for rodents especially if the room is well lighted.



nently prevented only by eliminating all such conditions around it.

Unsanitary conditions in a food plant may be developed in various ways. Whether it is a meat plant, a vegetable or fruit packing house, a bakery or the back end of a restaurant, the careless handling of organic substances and water is the forerunner of insanitation.

In a careless plant, small scraps of meat may fall to the floor and be overlooked; insects attack them; later on decay sets in; during the night, rats pack them around. Around the edges of processing vats and on the carving tables, the trucks or the packing machines, fragments are constantly being dislodged. They work into cracks and crevices. Small pieces, 'tis true, but the organisms that cause putrefaction are smaller still; and to them it is sufficient. Later on, fresh, clean material comes along; some of this decayed stuff is scraped up in passing; later still, the customer will wonder why his meat turns bad or his lard rancid.

Cleanliness Requires Care

In the fruit plant water is often everywhere. Pieces of fruit may fall to the floor and be trod into the surplus water. They soon ferment and decay, and the odor is nauseating; the workers are disgusted. Later, more fruit may fall, but someone quickly throws it back in the pile. Of course, the fruit is sterilized in the can, but that only stops—it doesn't remove—the effects of the contamination.

In the bakery many utensils are washed—or should be—every day. Most of them are large and require much water. If not changed often, this water soon becomes a "soup" more detrimental than beneficial. Pans thus washed will contaminate the next batch of food they hold. If not prevented, flour will drift to the four corners of a bakery. It collects on the overhead pipes and machinery, the walls and ceilings, where the warm, moist air later turns it into a bed of molds, to shower their spores on the foods below. Small pieces of dough as well as flour dust collect on the floor of every bakery. If this is not swept up frequently and thoroughly, the scrub man finally washes it up in the corners as dough, to breed molds and feed the cockroaches.

These same types of unsanitary practices—and many more—can happen in the kitchen or any other place where food is prepared; but the mere fact that most places do not permit such conditions to obtain does not in any way absolve the careless few.

It is impossible in any food plant to prevent at least some accumulation of waste materials during working hours. But these materials do not, in themselves, at once constitute insanitation. It is only when they are mingled with other objects that are contaminated or when they are permitted to remain long enough to become so of their own accord. For this reason, constant and thorough cleaning has become a fixed and rigid policy in the more progressive plants of today. When done in a careless or occasional manner it is not only more expensive but must of necessity result in the manufacture of an uncertain product.

To a large extent cleaning is labor; a matter of removing materials that are subject to decomposition from those that are not. But labor alone will not always accomplish this result; and so-called cleaners or solvents must be used. Most of such agents being water soluble, tend to dislodge and combine with the accumulations and carry them away when the article is rinsed. In many instances they also act as a mild sterilizer by destroying the few microorganisms that may remain. An excellent cleaner of this type for general use in food plants is given at the end of this article. Ordinary soap, of course, is an old stand-by for cleaning when the objects are not too oily, but it cannot be relied upon for much sterilizing value. High-pressure steam applied from a nozzle is often effective on machinery and large utensils; however, this method may prove a detriment if not thoroughly applied.

In every food plant there are many places, such as in wash bowls, toilets, urinals, basement sewer traps, floor valve boxes, pipe troughs, steaming and washing platforms, where a portion or all is not easily accessible to cleaning. These, of course, would be much more sanitary if cleaned, but they may also frequently be sterilized sufficiently that no ill effects or odors will develop. Such common materials as 40 per cent formaldehyde (formalin), chloride of lime, or even sodium fluoride powder as a disinfectant in less serious places are the materials customarily used for this purpose. For the spraying of machines, walls, or open places where formalin might be objectionable, a sodium hypochlorite disinfectant may be used. This can be made up easily as needed; it consists of:

	Per Cent
Sodium hypochlorite	3 to 5
Sodium chloride (salt)	3 to 5
Water	90 to 94

This formula makes a concentrated solution of which 3 to 5 oz. is mixed with three gallons of water for spraying.

Sterilization, of course, is the killing of the microorganic life in a material, thereby stopping the process of putrefaction and its associated odors. Odors will develop, however, in certain places such as urinal traps, where bacteria are not the sole cause; and while the sterilizers given above have some deodorizing or overpowering value, other materials with a less offensive smell, such as paradichlorbenzine, will often prove more satisfactory. This last material is sold in pressed-cake form with various added perfumes. It should always be placed on the traps, directly over the openings.

Makeshift Methods Unwise

There are many other deodorants, sterilizers and cleansing compounds on the market, some of which are excellent in their field. But, after all, sanitation has only one meaning, regardless of how it is obtained. Overpowering deodorants may effectually cover up an undesirable smell, but they will not remove it; sterilizers and disinfectants may literally destroy bacteria by the billions, but after their influence is spent, back come the bacteria. The basic material in which the organisms are living or the odors emanating from it must be completely removed or the object is not clean.

Every plant must depend to a large extent upon the separate efforts of each employee to carry on in the best interests of the company, but to expect many of them to maintain a very high respect for the quality of your products or to make any conscientious effort to prevent unsanitary materials from entering them is asking the impossible if these employees are compelled to work all day with dirty utensils and stand on half-scrubbed floors. It is not the employee who sets the sanitary standards of a company nor can he ever be expected to perform consistently above the precedent he finds.

The following issues of this series will be a continuation of pest-control problems dealing more specifically with the types, description and control of the various pests commonly encountered.

Washing Powder Formula

	Per Cent
Anhydrous sodium carbonate (Na_2Co_3)	60
Tri-sodium phosphate ($Na_3PO_4 \cdot 12H_2O$)	40

For normal washing or scrubbing use 1 to 3 oz. per gallon of hot water.

Copeland Bill to the Rescue

ROUND TWO of the battle for a new food, drug and cosmetic law began on Jan. 4, when Senator Royal S. Copeland introduced his subcommittee bill, designated as S. 2000, as a substitute for the Tugwell Bill, S. 1944, which was torn to shreds by the lacing it took during round one in the public hearings, Dec. 7 and 8. S. 2000 has been referred to the Committee on Commerce, which previously had assigned to a subcommitee, under the chairmanship of Senator Copeland, the consideration of the Tugwell Bill.

The next round will start when the Senate Commerce Committee, of which Dr. Copeland is a member, decides what, if any, further amendments are to be made before it reports the bill to the Senate. No further hearings are expected. When reported, the bill takes its place on the Senate calendar for legislative action. Action has not yet started in the House of Representatives. Probably the House Committee on Interstate and Foreign Commerce will not act until the Senate has acted.

The subcommittee's bill covers just as much ground as the repudiated Tugwell draft and, by reason of clarity of wording, covers it more effectively. Ambiguous phraseology and indefinite provisions and penalties have been replaced by a more concise and specific text which gives the reader confidence that the provisions of the bill mean just what meets the eye.

1. The greatest difference between the two bills lies in the powers conferred upon the Secretary of Agriculture. The Copeland Bill provides that the Secretary, with the aid and advice of a Committee on Public Health and a Committee on Food, shall, after a public hearing, promulgate regulations for the enforcement of this Act; fix and establish definitions and minimum standards of identity; and determine standards of quality and fill of containers.

2. Sec. 22 of the Tugwell Bill, which provided for voluntary inspection service, has been replaced in the Copeland Bill by one, having the same numerical designation, which amplifies Sec. 11. This defines the authority of the Secretary of Agriculture, authorizes the President to appoint the Committees on Public Health and Food, each having five members. It specifies the qualifications for appointment and duties of these committeemen, which include veto power over secretarial regulations.

3. Throughout the Copeland Bill the phraseology—"hereinafter provided," "if it is or may be," "by ambiguity or inference creates a misleading impression," "if the Secretary finds that," "as he (the Secretary) deems"—of the Tugwell Bill has been replaced by references to specific sections and paragraphs containing the provisions and by "is," "is false or misleading," and similar positive statements which require that the Secretary of Agriculture must prove the facts, in court if necessary, rather than thrust the burden upon industry of proving that his findings are capricious or arbitrary.

4. Also the Copeland Bill authorizes the Secretary of Agriculture (a) to accept plans for self-regulation of advertising practices, (b) to recognize substantial medical opinion or demonstrable scientific facts as legal basis for label claims, (c) to exempt listing of ingredients in order of prominence by weight where impracticable because of normal variations; and on packages of assorted food, (d) to include regulations for infant or invalid dietary foods which are purchased on basis of nutritional value, (e) to resort to arbitrary and autocratic action and issuance of permits only in cases where such action is necessary to protect the public health, and (f) to restrain by injunction the interstate shipment of products from plants in which inspection is denied duly designated agents of the Secretary upon reasonable request.

5. Penalties are provided for public disclosure or personal use of patentable knowledge obtained by agents of the Secretary through permit or factory inspection privileges. Also more specific penalties are invoked for the punishment of violators of the provisions of this bill. However, Sec. 24 of the Tugwell Bill, covering liability for personal injuries, has been omitted.

6. Provision is made for non-nutritive masticatory ingredients in chewing gum and for the labeling and packaging of foods, drugs and cosmetic products (not merely canned goods) at establishments other than those where the products were processed or packed.

Because of these and other differences between this and the Tugwell Bill (pp. 265-267 and 288, July, 1933, Food Industries) the text of the Copeland Bill, as it applies to the manufacture, shipment and sale of food, is as follows (the omitted text pertains specifically to drugs and/or cosmetics):

A BILL—S. 2000

To prevent the manufacture, shipment, and sale of adulterated or misbranded food, drink,* and to regulate traffic therein; to prevent the false advertisement of food, drink,* and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Federal Food and Drugs Act."

DEFINITION OF TERMS

SEC. 2. As used in this Act, unless the context otherwise indicates—

(a) The term "food" includes all substances and preparations used for, or entering into the composition of, food, drink, confectionery, or condiment for man or other animals.

(d) The term "Territory" means any territory or possession of the United States, including the District of Columbia.

(e) The term "interstate commerce" means (1) commerce between any State or Territory and any place outside thereof, or between points within the same State or Territory but through any place outside thereof, and (2) commerce or manufacture within the District of Columbia or within any other territory not organized with a legislative body.

(f) The term "person" includes individual, partnership, corporation, and association.

(g) The term "Secretary" means the Secretary of Agriculture.

(h) The term "label" means the principal label or labels (1) upon the immediate container of any food*, and (2) upon the outside container or wrapper, if any there be, of the retail package of any food.*

(i) The term "labeling" includes all labels and other written, printed, and graphic matter, in any form whatsoever, accompanying any food.*

(j) The term "advertisement" includes all representations of fact or opinion disseminated in any manner or by any means other than by the labeling.

ADULTERATED FOOD

SEC. 3. A food shall be deemed to be adulterated—

(a) (1) If it bears or contains any poisonous or deleterious substance which may render it dangerous to health; or (2) if it bears or contains any added poisonous or added deleterious substance prohibited, or in excess of the limits of tolerance prescribed, by regulations as provided by Secs. 10 and 22; or (3) if it consists in whole or in part of any filthy, putrid, or decomposed substance; or (4) if it has been prepared, packed, or held under insanitary conditions whereby it may have become contaminated with filth; or (5) if it is the product of a diseased animal or of an animal which has died otherwise than

*Also drugs and cosmetics.

by slaughter; or (6) if its container is composed of any poisonous or deleterious substance which may by contamination render the contents injurious to health.

(b) (1) If any valuable constituent has been in whole or in part abstracted therefrom; or (2) if any substance has been substituted wholly or in part therefor; or (3) if damage or inferiority has been concealed in any manner; or (4) if any substance has been added thereto or mixed or packed therewith so as to increase its bulk or weight in a deceptive manner, or reduce its quality or strength, or create a deceptive appearance.

(c) If it is confectionery and bears or contains any alcohol, resinous glaze, or non-nutritive substance except masticatory substances in chewing gum, coloring, and flavoring.

(d) If it contains a coal-tar color other than one from a batch that has been certified in accordance with regulations as provided by Secs. 10 and 22.

SEC. 6. A food* shall be deemed to be misbranded—

(a) If its labeling is false or misleading in any particular: *Provided,* That no drug shall be deemed to be misbranded under this paragraph because of any representation concerning any effect of such drug if that representation is supported by substantial medical opinion or by demonstrable scientific facts.

(b) If in package form it fails to bear a label containing: (1) The name and place of business of the manufacturer, packer, seller, or distributor; and (2) an accurate statement of the quantity of the contents in terms of weight, measure, or numerical count: *Provided,* That under Subdiv. (2) of this paragraph reasonable variations shall be permitted, and exemptions as to small packages shall be established, by regulations prescribed by the Secretary.

(c) The Secretary is hereby authorized to promulgate regulations exempting from any labeling or packaging requirement of this Act food* which are, in accordance with the practice of the trade, processed, labeled, or repacked in substantial quantities at establishments other than those where originally processed or packed, on condition that such articles are in conformity with the provisions of this Act upon removal from such processing, labeling, or repacking establishment.

(d) If any word, statement, or other information required on the label to avoid adulteration or misbranding under any provision of this Act is not prominently placed thereon in such a manner as to be easily seen and in such terms as to be readily intelligible to the purchasers and users of such articles under customary conditions of purchase and use.

MISBRANDED FOOD

SEC. 7. A food shall be deemed to be misbranded—

(a) (1) If its container is so made, formed, or filled as to mislead the purchaser, or (2) if its contents fall below the standard of fill prescribed by regulations as provided by Secs. 11 and 22.

(b) If it is offered for sale under the name of another food.

(c) If it is an imitation of another food, except that no imitation shall be deemed to be misbranded under this paragraph if its label bears the word "imitation" in juxtaposition with and in type of the same size and prominence as the name of the food imitated.

(d) If it purports to be or is represented as a food for which a definition and minimum standard of identity have been prescribed by regulations as provided by Secs. 11 and 22, and (1) its label fails to bear the name of the food prescribed in the definition and minimum standard, or (2) it fails to conform to such definition and minimum standard.

(e) If it purports to be or is represented as a food for which standards of quality have been prescribed by regulations as provided by Secs. 11 and 22, and (1) its label fails to bear, if so required by the regulations, a standard of quality in such terms as the regulations specify, or (2) it falls below such standard.

(f) If it purports to be or is represented as a food for which no definition and minimum standard of identity has been prescribed by regulations as provided by Secs. 11 and 22, and its label fails to bear (1) the common or usual name of the food, if any there be, and (2) the common or usual name of each ingredient such food bears or contains in order of predominance by weight; except that spices, flavors, and colorings, other than those sold as such, may be designated as spices, flavors, and colorings without naming each: *Provided,* That, to the extent that a statement on the label of each ingredient in order of predominance by weight is impracticable because of normal variations in ingredients or their quantities, usual to manufacturing or packing processes, reasonable variations from such order shall be permitted, and exemptions as to packages of assorted food shall be established, by regulations promulgated by the Secretary.

(g) If it is for special dietary uses, such as by infants or invalids or for other special nutritional requirements, and its label fails to bear, if so required by regulations as provided by Sec. 22, statements concerning its vitamin, mineral and other dietary properties which fully inform the purchaser as to its nutritional value.

FALSE ADVERTISEMENT

SEC. 9 (a) An advertisement of a food* shall be deemed to be false if it is false or misleading in any particular relevant to the purposes of this Act regarding such food*: *Provided,* That no advertisement shall be deemed to be false under this paragraph because of any representation concerning any effect of a drug if that representation is supported by substantial medical opinion or by demonstrable scientific facts.

TOLERANCES FOR POISONOUS INGREDIENTS IN FOOD AND COSMETICS AND CERTIFICATION OF COAL-TAR COLORS FOR FOOD

SEC. 10. (a) If an added poisonous or added deleterious substance in or on food or cosmetics is or may be injurious to health, the Secretary is hereby authorized to promulgate regulations, as provided by Sec. 22, prohibiting such added substance in or on any food or cosmetic, or establishing tolerances limiting the amount therein or thereon, for the protection of public health, taking into account the extent to which the use of such substance is required in the production of such food or cosmetic and the other ways in which the consumer may be affected by the same or other poisonous or deleterious substances.

(b) The Secretary is hereby authorized to promulgate regulations, as provided by Sec. 22, for the certification of coal-tar colors which are harmless and suitable for use in food.

DEFINITIONS AND STANDARDS FOR FOOD

SEC. 11. For the effectuation of the purposes of this Act the Secretary is hereby authorized to promulgate regulations, as provided by Sec. 22, fixing and establishing for any food (1) definitions and minimum standards of identity, and (2) objectively determinable standards of quality and fill of container: *Provided,* That the designation of such standards of quality shall, as far as consistent with public interest, follow prevailing trade nomenclature.

PERMIT FACTORIES

SEC. 12. (a) Whenever the Secretary finds that the distribution in interstate commerce of any class of food* may, by reason of conditions surrounding the manufacture, processing, or packing thereof, be injurious to health, and such injurious nature cannot be adequately determined after such articles have entered interstate commerce, and in such case only, he is authorized to promulgate regulations, as provided by Sec. 22, governing the conditions of manufacture, processing, or packing necessary to protect the public health, and requiring manufacturers, processors, and packers of such class of articles to hold a permit conditioned on compliance with such regulations.

(b) The Secretary is authorized to issue such permits for such periods of time as he may by regulations prescribe and to make regulations governing the issuance and renewal thereof. The Secretary is authorized to suspend immediately upon notice any permit issued under authority of this section if it is found that any of the conditions of the permit have been violated. The Secretary shall reinstate the permit whenever, after hearing and an inspection of the establishment, it is found that adequate measures have been taken to comply with and maintain the conditions of the original permit.

(c) Any officer or employee duly designated by the Secretary shall have access to any factory or establishment, the operator of which holds a permit from the Secretary, for the purpose of ascertaining whether or not the conditions of the permit are being complied with, and denial of access for such inspection shall be ground for suspension of the permit until such access is freely given by the operator.

FACTORY INSPECTION

SEC. 13. (a) In order adequately to regulate interstate commerce in food,* and enforce the provisions of this Act, officers or employees duly designated by the Secretary, after first making reasonable request and obtaining permission of the owner, operator, or custodian thereof, are authorized (1) to enter any factory, warehouse, or establishment in which food* are manufactured, processed, packed, or held for shipment in interstate commerce or are held after such shipment, or to enter any vehicle being used to transport such food* in interstate commerce; and (2) to inspect such factory, warehouse, establishment, or vehicle and all equipment, finished and unfinished materials, containers, and labels there used or stored.

*Also drugs and cosmetics.

(b) The several district courts of the United States are hereby vested with jurisdiction to restrain by injunction, temporary or permanent, the shipment in interstate commerce or delivery after receipt in interstate commerce of any food* from or by any factory, warehouse, establishment, or vehicle, designated in Par. (a) of this section, if the owner, operator, or custodian thereof has denied to officers or employees duly designated by the Secretary permission, after reasonable request, so to enter and inspect such factory, warehouse, establishment, or vehicle and equipment, finished and unfinished materials, containers, and labels there used or stored. Whenever such permission is granted, the injunction issued pursuant to this paragraph shall be dissolved, or may be continued in force subject to such conditions governing the inspection as the court may order. Violation of any injunction issued pursuant to this paragraph may be summarily tried and punished by the court as a contempt. Such contempt proceedings may be instituted by order of the court or by the filing of an information by the United States attorney.

RECORDS OF INTERSTATE SHIPMENT

SEC. 14. For the purpose of enforcing the provisions of this Act, carriers subject to the Interstate Commerce Act, as amended (U.S.C., Title 49), and other carriers engaged in interstate commerce, and persons receiving food* in interstate commerce, shall, upon the request of an officer or employee duly designated by the Secretary, permit such officer or employee to have access to and to copy all records showing the movement in interstate commerce of any food,* and the quantity, shipper and consignee thereof; and it shall be unlawful for any such carrier or person to fail to permit such access to and copying of any such record so requested when such request is accompanied by a definite statement in writing specifying the nature or kind of food* to which such request relates: *Provided,* That evidence obtained under this section shall not be used in a criminal prosecution of the person from whom obtained.

INVESTIGATIONS AND INSTITUTION OF PROCEEDINGS

SEC. 15. (a) The Secretary is authorized to conduct examinations and investigations for the purposes of this Act through officers and employees of the Department of Agriculture or through any health, food, or drug officer or employee of any State, Territory, or political subdivision thereof, duly commissioned by the Secretary. To aid in securing compliance with the requirements of this Act, the Secretary is further authorized to accept plans for such self-regulation of advertising practices as tend to effectuate the purposes of this Act, when presented by associations or groups representative of their industries: *Provided,* That such plans shall not restrict the responsibilities and powers conferred upon the Secretary by this Act and shall not be designed to promote monopolies or eliminate or oppress legitimate enterprise.

(b) It shall be the duty of each United States attorney to whom the Secretary reports any violation for institution of criminal, libel for condemnation, or other proceedings under this Act, or to whom any health, food, or drug officer of any State or Territory, or political subdivision thereof, presents evidence satisfactory to the United States attorney of any such violation, to cause appropriate proceedings to be instituted in the proper courts of the United States without delay. All suits instituted under this Act shall be by and in the name of the United States.

(c) The Secretary shall, before reporting any violation of this Act to the United States attorney for institution of criminal proceedings thereunder, afford due notice and opportunity for hearing to interested parties in accordance with such regulations as the Secretary shall prescribe. The report of the Secretary to the United States attorney for the institution of criminal proceedings under this Act shall be accompanied by findings of the appropriate officers and employees, duly authenticated under their oaths. Nothing in this Act shall be construed as requiring the Secretary to report for prosecution or for the institution of libel or injunction proceedings violations of this Act of a minor formal character only whenever he believes that the purposes of the Act can best be accomplished by a suitable notice or warning.

SEIZURE

SEC. 16. (a) Any article of food* in interstate commerce that is adulterated or misbranded or that has been manufactured, processed, or packed in a factory or establishment, the operator of which did not, at the time of manufacture, processing, or packing, hold a valid permit if so required by regulations under Sec. 12, shall be liable to be proceeded against while in interstate commerce or at any time thereafter on libel of information and condemned in any district court of the United States within the jurisdiction of which the article is found. The article shall be liable to seizure (1) by process pursuant to the libel, or (2) if a chief of station or other officer of the Food and Drug Administration, duly designated by the Secretary, has probable cause to believe that the article is so adulterated as to be imminently dangerous to health, then, and in such case only, by order of such officer, issued under his oath of office, particularly describing the article to be seized, the place where located, and the officer or employee to make the seizure. In case of seizure pursuant to any such order, the jurisdiction of the court shall attach upon such seizure. Any article seized pursuant to any such order shall thereupon be promptly placed in the custody of the court and a libel of information shall be promptly filed for condemnation thereof.

(b) When, upon the trial of any cause instituted pursuant to Par. (a) Subdiv. (2) of this section, judgment is rendered for the claimant, but it appears to the court that there was reasonable cause for the seizure, the court shall cause a proper certificate thereof to be entered and no officer or employee of the United States shall be liable to suit or judgment by reason of the seizure of the goods or the institution of such proceedings.

(c) The court may, by order at any time before trial, allow any party to a condemnation proceeding to obtain a representative sample of the article seized.

(d) Any article of food* condemned under this section shall, after entry of the decree, be disposed of by destruction or sale as the court may, in accordance with the provisions of this section, direct and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the Treasury of the United States; but such article shall not be sold under such decree contrary to the provisions of this Act or the laws of the jurisdiction in which sold: *Provided,* That after entry of the decree and upon the payment of the costs of such proceedings and the execution of a good and sufficient bond conditioned that such article of food* shall not be sold or disposed of contrary to the provisions of this Act or the laws of any State or Territory, the court may by order direct that such article be delivered to the owner thereof to be destroyed or brought into compliance with the provisions of this Act under the supervision of an officer or employee duly designated by the Secretary, and the expenses of such supervision shall be paid by the party obtaining release of the article under bond. Any article condemned by reason of the manufacturer, processor, or packer not holding a valid permit when so required by regulations under Sec. 12 shall be disposed of by destruction.

(e) The proceedings in cases under this section shall conform, as nearly as may be, to the proceedings in admiralty; except that either party may demand trial by jury of any issue of fact joined in any such case.

(f) When a decree of condemnation is entered against the article, court costs and fees, and storage and other proper expenses, shall be awarded against the person, if any, intervening as claimant of the article.

PENALTIES

SEC. 17. (a) The following acts are hereby prohibited:

(1) The introduction into interstate commerce of any food* that is adulterated or misbranded.

(2) The adulteration or misbranding of any food* in interstate commerce.

(3) The receipt in interstate commerce of any food* that is adulterated or misbranded and the delivery or proffered delivery thereof in the original unbroken package for pay or otherwise.

(4) The dissemination of any false advertisement by radio broadcast, United States mails, or in interstate commerce for the purpose of inducing, directly or indirectly, the purchase of food.*

(5) The dissemination of a false advertisement by any means for the purpose of inducing, directly or indirectly, the purchase of food* in interstate commerce.

(6) The introduction into interstate commerce of any food* if the manufacturer, processor, or packer does not hold a valid permit when so required by regulations under Sec. 12.

(7) The refusal to permit access to or copying of any record as required by Sec. 14.

(b) Any person who violates or causes to be violated any of the provisions of Par. (a) of this section shall be guilty of a misdemeanor and shall on conviction thereof be subject to imprisonment for not more than one year, or a fine of not less than $100 nor more than $1,000, or both such imprisonment and fine; and for a second or subsequent offense imprisonment for not more than two years, or a fine of not less than $100 nor more than $3,000, or both such imprisonment and fine.

(c) Notwithstanding the provisions of Par. (b) of this section, in case of a willful offense the penalty shall be imprison-

*Also drug or cosmetic.

ment for not more than three years, or a fine of not less than $1,000 nor more than $10,000, or both such imprisonment and fine.

(d) No person acting in the capacity of publisher, advertising agency, or radio broadcast licensee shall be deemed in violation of Par. (b) or (c) of this section by reason of the dissemination of any false advertisement. Any such person who, on reasonable request of an officer or employee duly designated by the Secretary, willfully refuses to furnish the name and post-office address of the person who caused him to disseminate such advertisement, shall be guilty of a misdemeanor and shall on conviction thereof be subject to the penalties prescribed in Par. (b) of this section.

(e) No dealer shall be prosecuted under Par. (b) of this section if he establishes a guaranty or undertaking signed by the person residing in the United States from whom he received the article of food,* or the advertising copy therefor, to the effect that such person assumes full responsibility for any violation of this Act, designating it, which may be incurred by the introduction of such article into interstate commerce or by the dissemination of such advertising. To afford protection, such guaranty or undertaking shall contain the name and address of the person furnishing such guaranty or undertaking, and such person shall be amenable to the prosecution and penalties which would attach in due course to the dealer under the provisions of this Act.

(f) Any person who forges, counterfeits, simulates, or falsely represents, or without proper authority uses any mark, stamp, tag, label, or other identification device required by regulations promulgated for the enforcement of the provisions of Sec. 12 shall be guilty of a misdemeanor, and shall on conviction thereof be subject to imprisonment for not more than one year, or a fine of not less than $1,000 nor more than $5,000, or both such imprisonment and fine.

(g) Any person who uses to his own advantage or reveals, other than to the Secretary or his officers or employees, any information acquired under authority of Sec. 12 or 13 concerning any patentable method or process not protected by letters patent, shall be guilty of a felony, and shall on conviction thereof be subject to imprisonment for not more than two years or a fine of not more than $5,000 or both such imprisonment and fine.

LIABILITY OF CORPORATIONS AND THEIR OFFICERS

SEC. 18. (a) When construing and enforcing the provisions of this Act, the act, omission, or failure of any officer, employee, or agent acting for or employed by any person, within the scope of his employment or office, shall in every case be deemed to be the act, omission, or failure of such person, as well as that of the officer, employee, or agent.

(b) Whenever a corporation or association violates any of the provisions of this Act, such violation shall also be deemed to be a violation of the individual directors, officers, or agents of such corporation or association who personally ordered, or did any of the acts constituting, in whole or in part, such violation.

INJUNCTION PROCEEDINGS

SEC. 19. (a) Each of the following acts is hereby declared to be a public nuisance:

(1) The repetitious introduction into interstate commerce of any adulterated or misbranded food.*

(2) The repetitious dissemination of any false advertisement by radio broadcast, United States mails, or interstate commerce for the purpose of inducing, directly or indirectly, the purchase of food.*

(3) The repetitious dissemination of a false advertisement by any means for the purpose of inducing, directly or indirectly, the purchase of food* in interstate commerce.

(b) In order to avoid multiplicity of criminal or libel for condemnation proceedings, the district courts of the United States are hereby vested with jurisdiction to restrain by injunction, temporary or permanent, any person from continuing any such nuisance. In such injunction proceedings it shall not be necessary to show on the part of such person an intent to continue such nuisance.

(c) Violation of any such injunction may be summarily tried and punished by the court as a contempt. Such contempt proceedings may be instituted by order of the court or by the filing of an information by the United States attorney; and process of the court for the arrest of the violator may be served at any place in the United States or subject to its jurisdiction.

IMPORTS AND EXPORTS

SEC. 20. (a) The Secretary of the Treasury shall deliver to the Secretary of Agriculture upon his request, from time to time, samples of food* which are being imported or offered for import into the United States, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture and have the right to introduce testimony. If it appears from the examination of such samples or otherwise that (1) any false advertisement of such food* has been disseminated in the United States by the importer or exporter thereof, or any person in privity with him, within three months prior to the date such article is offered for import, or (2) such article has been manufactured, processed, or packed under insanitary conditions, or (3) such article is forbidden or restricted in sale in the country in which it was produced or from which it was exported, or (4) such article is adulterated or misbranded within the meaning of this Act, then such article shall be refused admission.

(b) The Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any such article refused admission, unless such article is exported by the consignee within three months from the date of notice of such refusal, under such regulations as the Secretary of the Treasury may prescribe: *Provided,* That the Secretary of the Treasury may deliver to the consignee any such article pending examination and decision in the matter on execution of a bond as liquidated damages for the amount of the full invoice value thereof together with the duty thereon, and on refusal to return such article or any part thereof for any cause to the custody of the Secretary of the Treasury when demanded for the purpose of excluding it from the country or for any other purpose, said consignee shall forfeit the full amount of the bond as liquidated damages.

(c) All charges for storage, cartage, and labor on any article which is refused admission or delivery shall be paid by the owner or consignee and in default of such payment shall constitute a lien against any future importations made by such owner or consignee.

(d) A food* intended for export which is not adulterated within the meaning of Sec. 3, Par. (a); Sec. 4, Par. (a); or Sec. 5 shall not be deemed to be adulterated or misbranded under this Act if it (1) accords to the specifications of the foreign purchaser, (2) complies with the laws of the country to which it is intended for export, and (3) is labeled on the outside of the package with the words, "For Export." But if such article is sold or offered for sale in domestic commerce, this paragraph shall not exempt it from any of the provisions of this Act.

*Also drugs or cosmetics.

PUBLICITY

SEC. 21. The Secretary shall cause to be published periodically a report summarizing all judgments, decrees, and court orders which have been rendered, including the nature of the charge and the disposition thereof. The Secretary shall also cause to be disseminated such information regarding food* as may be necessary to protect against danger to public health or fraud upon the consumer: *Provided,* That no such information shall be so disseminated regarding any brand of food,* before rendition of final judgment in proceedings against it except in cases involving imminent danger to health or gross deception of the consumer.

GENERAL ADMINISTRATIVE PROVISIONS

SEC. 22. (a) The authority to make regulations for the efficient enforcement of this Act, except as otherwise provided in this section, is hereby vested in the Secretary.

(b) To aid and advise the Secretary in promulgating regulations for the protection of public health, as contemplated by Sec. 3, Subdiv. (2) of Par. (a), and Par. (d); Sec. 4, Subdiv. (2) of Par. (b); Sec. 5, Par. (b); Sec. 8, Pars. (b), (c), and (d), Subdiv. (1) of Par. (e), and Par. (g); Sec. 9, Par. (c); Sec. 10; and Sec. 12, Par. (a), a Committee on Public Health is hereby provided which shall consist of five members designated by the President with a view to their distinguished scientific attainment and interest in public health and without regard to their political affiliation.

(c) To aid and advise the Secretary in the promulgation of regulations with respect to food as contemplated by Sec. 7, Subdiv. (2) of Par. (a), and Pars. (d), (e), and (g); and Sec. 11, a Committee on Food is hereby provided which shall consist of five members designated by the President with a view to their scientific and technical knowledge of food and without regard to political affiliation.

(d) Whenever the Secretary deems that any regulation contemplated by the provisions of this Act enumerated in Pars. (b) and (c) of this section should be established, he shall so advise the appropriate committee. With the approval of not less than three members, the committee shall recommend to the Secretary a proposed regulation, and the Secretary shall give notice of the proposal and of the time and place of a public hearing to be held thereon

(Turn to page 96)

Action Begins With Transfer of *Food Codes* to N.R.A.

Executive order classifying food codes calms tempest in A.A.A. and ends impasse which was hamstringing food manufacturers.

TRANSFER of food industry codes from A.A.A. to N.R.A. has been effected with a minimum of difficulty and red tape. Administration of these codes and of the labor provisions of the codes retained by A.A.A. will be in the hands of the new Division 6 of N.R.A., whose offices are in the overflow N.R.A. quarters in the Investment Building, at 15th and K Streets, Washington, D. C.

By executive order, President Roosevelt on Jan. 8 authorized this move and gave official definition to three groupings of the old A.A.A. codes: (1) those which as "first processing" or for other reasons remain at A.A.A.; (2) those which are transferred to N.R.A. but have certain trade practices that must be given the written approval of the Secretary of Agriculture; and (3) those which are transferred to N.R.A. in their entirety.

Division 6 has been set up with four sections: (1) Fish; (2) Groceries, including canned foods; (3) Meats, fruits and vegetables, nuts and feed so far as labor is concerned in meat processing—not in butcher shops—and in the feed codes; (4) Tobacco (wholesale and retail), confectionery, florists, vegetable oils, and beverages, including labor provisions only for the alcoholic.

The N.R.A. set-up has proved its effectiveness by getting through the wholesale and retail and the manufacturers' codes. Both of these were rewritten in N.R.A. form, based on the work already done at A.A.A., and put through with the addition of the stop-loss provision in the former. The code for food manufacturers, while put through, is still under discussion as to the possibility of separate codes, rather than supplementary codes, for certain of the industries, notably canners and beverage bottlers. The tendency seems to be, although this has not yet been decided finally, for these separate codes to be granted and for a coordinating unit, a limited sort of master code *authority* to take care of conflicts which may arise in labor provisions and trade practices. Such a coordinating unit would be made up of a dozen or more outstanding men in the food industries, who might meet monthly and whose primary job would be to see that the code authorities of the various food codes work along the same lines and to eliminate conflicts before they get serious.

Text of the Executive Order

BY VIRTUE of the authority vested in me by Title I of the National Industrial Recovery Act of June 16, 1933 (Public, No. 67, 73d Cong.), Executive Order No. 6182 of June 26, 1933 (as supplemented by Executive Order No. 6207 of July 21, 1933, and Executive Order No. 6345 of Oct. 20, 1933), which delegated to the Secretary of Agriculture certain of the powers vested in me by the aforesaid Act, is hereby amended as follows:

All the functions and powers heretofore delegated by said Executive Orders to the Secretary of Agriculture are hereby transferred and delegated to the Administrator of the National Recovery Administration excepting only as follows:

I. The functions and powers transferred and delegated in so far as they relate to industries, trades, or subdivisions thereof which are engaged principally in the handling, processing, or storing of agricultural commodities, principally domestic, up to and including the point of first processing and the subsequent sale or disposition by the first processor (hereafter for convenience referred to as "first processors"), shall not, without the written approval of the Secretary of Agriculture, be exercised through the fixation or control of:

(1) Prices in connection with the purchase of agricultural commodities from producers and the subsequent sale or disposition by first processors of the first processed articles.
(2) Brokerage fees involved in the purchase of agricultural commodities from producers and the subsequent sale or disposition by first processors of the first processed articles.
(3) Credits and financial charges with reference to agricultural products.
(4) Commission rates in connection with the purchase of agricultural commodities from producers and the subsequent sale or disposition by first processors of the first processed articles.
(5) Purchasing arrangements with regard to agricultural commodities in their original form.
(6) Marketing quotas in connection with the purchase of agricultural commodities from producers and the subsequent sale or disposition by first processors of the first processed articles.
(7) Plant capacity and/or its allocation.

This limitation upon the functions and powers transferred and delegated is established in order that such subject matters may be dealt with by the Secretary of Agriculture under Sec. 8 (2) and/or (3) of the Agricultural Adjustment Act without conflicting with the exercise of such functions and powers by the Administrator of the National Recovery Administration.

The industries and trades or subdivisions thereof covered by this Sec. I of this Order are limited to (a) those listed in Exhibit A hereto attached and hereby made a part hereof and (b) such other first processors as have not heretofore filed codes pursuant to the National Industrial Recovery Act.

II. The functions and powers transferred and delegated shall not include those relating to the following industries, trades and subdivisions thereof, but such functions and powers with respect thereto shall continue to be delegated to the Secretary of Agriculture pursuant to and in the manner set forth in Executive Order No. 6182, as supplemented by Executive Order No. 6207, and 6345:

(1) Commodity Exchanges.
(2) Industries, trades, and subdivisions thereof engaged principally in the handling, processing or storing of:
(a) Milk and its products, but excepting packaged pasteurized, blended, and/or processed cheese.
(b) Oleomargarine and vegetable oils, but excepting soya bean oil.
(c) Cotton and cottonseed and their products, including ginning, cottonseed crushing, cottonseed oil refining (excluding the manufacture of textiles and processing and handling subsequent thereto).
(3) Industries, trades and subdivisions thereof engaged principally in the handling, processing or storing up to the point of first processing and the subsequent sale and disposition by such processors of:
(a) Livestock and its products.
(b) Wheat, corn, rice and other grains, but excepting cereals, pancake flours, self-rising flours, cake flours and like products sold in

grocery store sizes, and grocery-store products of corn.
(c) Sugar and its byproducts.
(d) Anti-cholera hog serum and virus.
(e) Naval stores.
(f) Tobacco and its products.
(4) Fresh fruits and vegetables and poultry and poultry products up to and including handling in wholesale markets and the subsequent sale and disposition by such handlers in wholesale markets.

Provided, however, that the functions and powers referred to in this Sec. II shall be so exercised as to harmonize with the exercise of similar functions and powers with respect to other codes approved by the Administrator of the National Recovery Administration; but any functions and powers reserved to the Secretary of Agriculture by this Sec. II so far as they relate to industries, trades or subdivisions thereof which are engaged principally in the handling, processing, or storing of agricultural commodities up to and including the point of first processing and the subsequent sale or distribution by the first processor, shall not, unless the Secretary of Agriculture otherwise decides, include or affect the subject matters referred to in subclauses (1), (2), (3), (4), (5), (6), or (7) of Sec. I of this Order.

III. If a question should arise as to whether or not any specific trade, industry or subdivision thereof is, or is not, within any of the terms of provisions of this Order, the question shall be finally and conclusively determined by written agreement between the Secretary of Agriculture and the Administrator of the National Recovery Administration; or, if they do not agree, then the question shall be submitted to the President, whose decision thereon shall be final and conclusive.

IV. Any functions and powers which are hereby delegated and transferred to the Administrator of the National Recovery Administration or which have heretofore been delegated to the Secretary of Agriculture and which remain delegated to the Secretary of Agriculture by the terms of this Order, may, by written agreement between the Secretary of Agriculture and the Administrator of the National Recovery Administration, be redelegated to the Secretary of Agriculture or be delegated to the Administrator of the National Recovery Administration as the case may be.

Exhibit "A"

(Codes transferred to N.R.A. in their entirety, but trade practice provisions relating to certain subjects, although approved by N.R.A. and submitted to the President, also require the written approval of the Secretary of Agriculture.)

Beans—(Dried) Shippers
Brooms Manufacturing
Canners
Feed—Retail
Florists
Hides and Skins Dealers
Peanuts—Millers
Pecan Distributors
Pecan Shellers
Pickle Packing
Pop Corn Manufacturing
Potato Chip Manufacturing
Preservers
Rendering
Seed Producing and Shippers
Soy Bean Oil Manufacturing
Vinegar Manufacturing

Memorandum

Letters will be exchanged between the Secretary of Agriculture and the Administrator of the National Recovery Administration which will enumerate specifically the codes to be retained by A.A.A. and referred to in Sec. II of the Order.

As to codes already filed, Sec. II will be limited to the following:

Anti-cholera hog serum
Cheese
Corn Millers
Corn Products
Cotton Exchange—New York
Cotton Exchange—New Orleans
Cotton Traders—Cottonseed Crushing
Cottonseed Oil Refining
Egg and Poultry
Feed, Hay and Straw Distributors
Feed Manufacturers
Fruits and Vegetables—Fresh
Grain—Country Elevators
Grain Exchanges
Grain—Flour Milling
Grain—Terminal Elevators
Hog Exchanges
Linseed Oil
Livestock Marketing Agency Industry
Malsters
Oleomargarine
Poultry Breeders
Rice
Stockyards Operators
Sugar Exchanges
Sugar (Beet) Producing
Sugar Refining
Tobacco, Cigar Manufacturing
Tobacco Leaf Dealers
Warehouse, Cotton
Warehouse, Refrigerated
Warehouse, Rice
Warehouse, Tobacco
Warehouse, Wool and Mohair

As to codes covered by Sec. II, the following is a list (not necessarily exhaustive) which may hereafter be filed:

Butter
Cigarette Manufacturers
Ice Cream
Milk—Fluid
Milk—Evaporated
Meat Packers
Naval Stores

THE GENERAL CLAUSE at the end of Sec. II of the listed exceptions means that the food codes which remain at A.A.A. are to be phrased in the form of N.R.A. codes, where that phrasing does not affect the farmer directly or infringe on his interests. Interpreting further, this clause means that the provision in the old A.A.A. codes that the Secretary of Agriculture is to have full and free access to company books at all times and the provision that all future amendments to the food and drug laws are accepted will both, probably, be eliminated from future codes; even from those that remain at A.A.A. This is a matter of prime importance, and possibly will go so far as to include almost a veto power by N.R.A. on A.A.A. provisions affecting the industry only and not the farmer. Always, however, with the understanding that any provisions that may be felt necessary to protect the farmer will be put in; A.A.A. is still the boss.

The provision of Sec. I of the exceptions, where the Secretary of Agriculture retains the right to approve, in writing, certain trade practices with relation to prices paid to farmers, brokerage fees, credits, commission rates, purchasing arrangements, marketing quotas and plant capacity and allocation of production, is not as serious a handicap as it at first appears. These are provisions that, at A.A.A., have gone into marketing agreements, but have little or no place in N.R.A. codes or codes of the N.R.A. type, and the provision probably was inserted to protect the right of A.A.A. to set up marketing agreements and to be sure that nothing gets into codes that might nullify or conflict with A.A.A. marketing agreements when and if drawn. It is more a safeguard than a punitive measure.

It is also to be noted that by Sec. IV of the exceptions any code may be transferred back and forth between A.A.A. and N.R.A. upon written agreement between the Administrator of N.R.A. and the Secretary of Agriculture. It is to be borne in mind, however, that applications for any such transfer should be made first to the Secretary of Agriculture, which is the point of origin for decisions in the matter. N.R.A. has not indicated any willingness to stick its neck out to fight to get any code transferred to it.

The list of industries whose codes remain at A.A.A. contains some of considerable interest, largely because of the surprise which may be occasioned by their retention. The first is the retention of hog cholera serum—application for transfer of which to N.R.A. has already been made—at A.A.A. The reason for its original retention at A.A.A. seems to be the double fact that there is considerable fear of an upping of prices if not controlled for the benefit of the farmer, and that the Bureau of Animal Industry of the Department of Agriculture has always retained a careful supervision over the production of the serum, which, moreover, is not produced by the regular biological laboratories but by a distinct industry. Naval stores are being kept at A.A.A. because a marketing agreement is now being drawn up, and the code is being produced by the same officials as are working on the marketing agreement. Vegetable oils are held at A.A.A. throughout the whole list for various reasons: one is the competitive position of edible oils through the oleomargarine business; another is that the linseed-oil or flaxseed growing industry is tied in with the wheat industry through use of the same lands for the production of both. It is of interest that cottonseed refining is being kept at A.A.A., although it is actually about the third process rather than a first-processing operation.

The 200 codes which moved over to N.R.A. without restrictions will be drastically compressed. Many of them are regional, like the potato-chip man-

ufacturers of southern California, which, of course, have no place under N.I.R.A., and will be included in the various industry codes. Others, like Hebrew bakers, apparently are small units of general industries, although there may be differences in labor conditions which will demand separate, but supplementary, codes. And so on down the list. These codes are now being worked over carefully at N.R.A. It is to be noted, however, that much of the necessary research and spade work on all of these codes has already been done at A.A.A., and to some extent at N.R.A. as concerns labor provisions. The job which the new division at N.R.A. is getting under is the swinging of all these codes into complete coordination of flow through the code-making process, and this can safely be said to be progressing splendidly.

Many problems are in evidence, but few new ones, although at N.R.A. there will be more emphasis on the welfare of the industries concerned, for N.R.A. codes are sponsored by and granted to the industries themselves. Other problems have arisen, too, in the change of approach to the problems of the codes, like the displacement of hand labor, and the taking care of these men and women without pushing the industry back into the hand-working stage of their development. N.R.A. looks out for labor, and the labor phase of the food industry codes may be counted on to have careful attention.

At A.A.A. there has been an important change in the machinery as to the food industry codes remaining. Heretofore, there was a sharp line between the production of foodstuffs and the processing and marketing thereof. All of these functions have now been combined at A.A.A. into the new Commodity Division, which will now have a more complete picture of the situation than was possible before. It should work to the benefit of food processing industries in their relations with A.A.A.

A.A.A. REORGANIZES

To Wrestle With *Production Problems*

CHESTER C. DAVIS, Administrator, with the approval of Secretary Wallace, has announced reorganization of the A.A.A. The purpose, Mr. Davis said, "is to establish a compact organization to deal more effectively and directly with major problems confronting American agriculture."

Now that the first rush of emergency is over, Mr. Davis explained, it is possible to institute economies in personnel. The transfer to the N.R.A. of many codes for industries of remote interest to the farmer also will enable the A.A.A. henceforth to concentrate its efforts intensively upon problems of the most pressing concern to agriculture. Most essential of these are adjustments in production needed to attain and maintain increased farm income.

Three assistant administrators are Victor A. Christgau, H. R. Tolley and Alfred D. Stedman. Mr. Christgau will be in direct charge of the Commodities Division, will take over the functions of the Production Division and certain retained sections of the Processing and Marketing Division. His two assistants are Jesse W. Tapp, of Henderson, Ky., and D. P. Trent, director of Agricultural Extension in Oklahoma.

H. R. Tolley of Berkeley, Calif., dean of the agricultural economists in the Department of Agriculture and director of the Giannini Foundation, is appointed to head a new Planning Division. In this capacity he will work out an alignment of different production-adjustment plans. As Assistant Administrator, Mr. Stedman will have charge of the Division of Information and Records. In this division are to be the Consumers' Counsel and his staff, a press section, and units to take care of correspondence and printing. Since the organization of the A.A.A., Mr. Stedman has been director of the Division of Information, the activities of which hitherto have been chiefly the issuance of press information. The new Division of Information and Records will also perform other related functions.

Twelve of the sections will be continued under the direction of their present section chiefs. "It is in these sections," Mr. Davis said, "that the major programs undertaken or being considered by the Administration, originate. They are our working units, where the immensely important, painstaking and arduous enterprises for assistance to farmers are proposed and developed. The service to agriculture of these section chiefs and their assistants, and that of the Consumers' Counsel in behalf of the consumers of the country, has been of high character and sincere devotion to duty."

Sections which will continue under the direction of these chiefs are: cotton, Cully A. Cobb; tobacco, John B. Hutson; wheat, George E. Farrell; corn and hogs, Dr. A. G. Black; dairying, Acting Chief J. H. Mason; general crops, Jesse W. Tapp; sugar and rice, A. J. S. Weaver; cattle and sheep, Harry Petrie; replacement crops, Joseph F. Cox; meat processing and marketing, Guy C. Shepard; grain processing and marketing, Frank A. Theis; contract records, W. B. Jenkins; with Dr. Frederic C. Howe as Consumers' Counsel.

FIRST CODE Under New A.A.A. To FLOUR MILLERS?

WITH much of the tangled wild growth and thorny brambles cleared out of the A.A.A., headway is being made on codes for the "first processing" industries. The first code completed and adopted will go far toward setting precedents for those that follow. For that reason much attention is being focused on the code of fair competition for the wheat-flour-milling industry, which was started toward a probable early consummation at hearings on Jan. 15-17 before A.A.A. and N.R.A. authorities.

As in other such industries, A.A.A. will control features of the code not relating to labor. The labor features will be defined and administered by N.R.A. Discussions at the hearings indicate the development of a code covering virtually all phases of flour milling, but not with other operations, such as the milling of non-wheat cereals by flour millers.

Main presentation of the millers' position as to the code was made by the Millers' National Federation, which probably will be the trade agency through which the industry will function under the code. However, the status of the federation as the most representative body of millers was attacked by small millers or representatives of small-miller groups.

Principal divisions of opinion at the hearings reflected conflicts between the views of small- and large-unit operators. The rifest one on a major point of policy was as to the limitation of machine hours of operation in the in-

dustry. Large-unit groups were for the virtually no-limit rule proposed in the tentative code. Under that rule any mill could operate 24 hours a day 6 days a week. Most of the small- and moderate-volume groups advocated a restriction of machine hours to 96 or 120 hours a week. These argued that the capacity of the industry is now nearly 50 per cent greater than productive need and that the code will be of little benefit to small-volume millers unless production per unit of all mills is curbed.

It was agreed by all that outlawed methods of declared unfair competition should cover rebates, premiums to buyers or their employees, waiving of charges, commercial bribery, guarantees against price declines, fictitious and discriminatory prices, and sales for delivery beyond a period of 90 days. There was difference of opinion as to whether the code should give approval to the customer-premium advertising method. Spokesmen for large operators, notably General Mills, were most favorable to the tentative-code provision authorizing the method. Several small millers opposed it.

Sentiment seemed favorable to a proposed rule by which millers would be required to make a carrying charge of one-third cent a barrel per day when buyers cause deliveries of flour to be delayed beyond a 90-day period and one of 25 cents a ton for each fifteen days of delivery delay caused by a purchaser of mill feed.

While differing as to whether per-unit production should be limited, there was virtually no expressed objection by millers respecting a proposed prohibition against the starting of new mills except by virtue of a holding, in each case, of economic need by the Secretary of Agriculture. Some of the millers objected to a proposed rule whereby a simliar prohibition would be placed against the putting into operation of mills which are non-active at the time the code goes into effect.

There was fair agreement as to a proposal that the code contain a stop-loss price provision. The proffered rule as to this would require all millers to sell flour at prices embodying full raw-material costs and 85 per cent of the average of other costs as determined from time to time for the industry by the Millers' National Federation.

Proposed labor and wage provisions call for a 42-hour work week for the body of flour-mill employees, with time averageable over periods of 17 weeks. Such employees would be allowed to work not more than 10 hours in any day and for work in excess of 8 hours during the day a 33 per cent payment for overtime would be required. Minimum wage rates for ordinary mill operatives would be 45 cents an hour in cities of over 500,000 population; 42¼ cents in cities of 250,000 to 500,000; 40 cents an hour in cities and towns of 2,500 to 250,000; and 37½ cents an hour in towns of 2,500 population or less. In the area east of the Mississippi River and south of the Ohio and Potomac rivers the allowable wage rates might be 5 per cent under the minima prescribed in the code. Minimum wage rates for office workers would be, as proposed, $14 to $15 a week, depending on the size of the town or city. Exempted executive employees would be defined by pay rates ranging from $35 or more in the largest places of operation to $25 or more in the smallest.

It was stated in the hearings that operations under the P.R.A. have increased operating costs to an extent averaging about 5 cents a barrel for flour, and that on the basis of recent cost data the stop-loss price basis factor, as proposed in the tentative code, would be at present 55.2 cents a barrel for other than raw material.

The Millers' National Federation proposed that the code be administered for the industry by a Code Authority consisting of fifteen members, thirteen of whom would be chosen by the federation's executive committee and the other two by non-members of the federation or the Secretary of Agriculture. Dr. W. H. Strowd, of the new Independent National Millers' Association, urged that the members of the administering body be elected regionally by members of the industry.

Provisions of the code as proffered would not apply to the sale by millers of grocery specialties like pancake flour, cereal foods and cake flour, put out in packages of 5 lb. or less, but it would forbid the use of such articles, as gifts, to induce purchases of other goods.

Some of the A.A.A. conductors of the hearings indicated that they thought the code should contain rules relative to misbranding, false advertising, and similar practices. The millers opposed this on the ground that the code would thus be taken into fields covered by other regulations.

Costs Cut by Eliminating Outmoded Trucks

(Concluded from page 59)

and the rear one the words, "Greenfield Sausage," one of the popular products of Hammond Standish & Co.

Asked how the operation of the new units is achieving savings, H. M. Shulman, director of purchases and mechanics at the Hammond Standish plant, says: "We saved $800 right off the bat in license fees. This was effected by eliminating five units entirely and because of the lighter weight of the new trucks.

"Then the saving on gas is a big item. While the mileage on our old trucks was only four per gallon, on the new units we are securing eight miles or more. The maintenance cost is another factor showing a saving. The standardization of tires and parts made possible by the new units represents another saving, as well as being more convenient. Together with the elimination of five drivers, these economies will enable the new units to pay for themselves within a reasonable time.

"In addition to these definite material savings, there are other advantages due to the replacement. One of these is the pride which drivers take in operating the new trucks. Our business is of such a nature that, from both operating and sanitary viewpoints, more than unusual care is demanded. The pride drivers take in the new trucks is making them even more careful than with the replaced units.

"Since we joined the Safety Council, over three years ago, we have had an excellent accident record. We believe that the new trucks are having such a stimulating effect that accidents may be still further reduced.

"The advertising value of the new units, while impossible to figure in dollars and cents, is still very real. The black signs against a bright yellow background furnish a color combination of more than ordinary appeal. Whether one plans it or not, the trucks of any concern form a constant advertisement of that firm, either for good or bad. We have tried to make our new trucks a favorable advertisement of our firm and our products, and we feel that they are a very valuable asset in this direction, with the added advantage that it is costing us nothing extra.

"We have heard it remarked, 'You must have a great deal of courage to invest in a new delivery fleet in such times as these, especially as your old equipment is still in running order.' Our answer to this is that our purchase of the new fleet is not a matter of courage or of faith in the future. It is a matter of faith in the present. There is such a thing as saving money by spending it. We believe in saving money *now*—that is why we purchased our new fleet."

Canning Industry to Allocate Production!

A CONVENTION that began long before it commenced and was going strong after its adjournment—the most unusual and most important convention ever held by the National Canners' Association and the canning industry—has just closed in Chicago. Dates meant nothing, for, although scheduled to open on Jan. 15 at the Stevens Hotel, the canners had assembled on Jan. 11 and were in continuous day and night sessions until interrupted long enough to hold a formal "opening session" on the fifth day, listen to four set addresses and then go into huddles again until Jan. 19. On the ninth day, formal adjournment took place, but the conventioning continued, though with fewer members present.

Those who arrived on the "opening" day missed the usual long lines waiting to register and erroneously concluded that the convention was a flop. They were partially set right when they discovered every room was taken. Yet when they visited exhibits and found them neglected they were dubious.

Where were the canners? Why did the convention start four days early? Why were canners in continuous sessions, day and night, for practically ten days?

The industry has decided to try to control production under a series of commodity marketing agreements under A.A.A. Many problems of preparation of marketing agreements, allotments and allocations were still unsolved when the date for official adjournment arrived and the meeting continued as a canning industry meeting rather than an association meeting.

Steering committees were appointed by commodities to go immediately to Washington to obtain advice and A.A.A. sanction and carry the agreements to successful conclusions, via public hearings and other necessary means.

IN THE despairing days of January, 1933, nearly all canners would have signed anything that looked like a way out, but, because most of them have made a little money since then and, because the statistical position of canned foods is excellent, the current optimism is an obstacle to ready acceptance of plans for restriction of production and allocation of business and impounding of surpluses. All agreed that control of production would be necessary to protect whatever prosperity the industry possesses today, but only a few were willing to submit their own businesses to the restrictions to be imposed.

The rank and file were in a fog. Bewilderment was supreme. Slow thinkers or those whose knowledge of practical or academic economics was limited were unable to see where the industry was going and refused to vote either yes or no on anything. Fast thinkers—usually heads of large enterprises—ran the show, but were at a serious moral disadvantage because it had somewhat the false appearance of steam-roller tactics with the big fellows taking advantage of the little fellows.

In vain did chairmen and others implore a vote on important proposals. In vain did they argue that the vote was merely an expression of opinion that could not possibly be binding on them or on the industry. And usually it was vain to explain that not until the plan was tentatively agreed upon by the industry, passed upon by A.A.A., and given a public hearing, would a formal vote be taken which would be binding. Many refused to vote on the question of whether they wanted a marketing agreement.

PLANS for production control by commodities follow the same general pattern. Average volume of individual business during the past six years is to be the basis of the individual percentage of the total pack of that commodity.

The Bureau of Agricultural Economics is to estimate the probable quantity of the commodity which can be consumed at reasonable price levels (above cost of production in most cases). Then the volume of production is to be allocated to the individual concern on the basis of that concern's percentage of the total.

In the case of corn, the country is divided up into fifteen areas to which an allotment of the 1934 estimated pack is to be made. Suballotments by cases of goods are then to be apportioned to each packer who intends to operate. A regional or local area commodity committee will next study the statistics of yields per acre by individual concerns and will translate this into the permissible acreage by varieties which each packer may plant or contract, and these figures will constitute his maximum.

It is proposed that as a penalty for selling below his cost a packer's allotment for the year following shall be reduced in a manner to "reflect" his behavior. If a packer shall complain that his competitor is selling below cost, the complainant as well as the defendant must submit to an audit to determine the facts.

Any surplus production above allotments is to be impounded and if not released by the National Commodity Committee at the end of 1934 it shall be deducted from that packer's 1935 allotment of production.

Enforcement of agreements will be by licensing under A.A.A.

At the close of the convention the following situation prevailed:

Wax and String Beans—Marketing agreement, proposed earlier in week, now rescinded. No plans until somebody starts something.

Canned Tomatoes—Plan proposed for marketing agreement and allotment, to go to Washington for conference.

Beets—Approved a marketing agreement and production control similar to peas and corn. Committee to go to Washington for conference.

Kraut—Do not want allocation of acreage or pack, but desire a marketing agreement calling for $6 a ton for cabbage, which probably will restrict the size of pack. (Kraut is very scarce at this time.—Editor.)

Peas—Marketing agreement proposed to allocate not only production by designating number of acres to be planted but also to establish marketing quotas. Surpluses to be impounded.

Mushrooms—Do not expect to allocate. Believe that foreign exchange rates will prevent import competition.

Apples and Apple Products—Adopted a code but are awaiting the outcome of action by vegetable packers before proposing a marketing agreement.

Corn — Adopted a marketing agreement allocating production. Committee to go to Washington immediately for conference and further action.

Cherries — Still struggling with the problem. Believe they must have an agreement or one will be imposed on them by A.A.A.

Other Products—No reports available.

CONSIDERABLE skepticism was expressed privately by innumerable canners as to the practicability of allocation of business or the workability of the plan, particularly in view of the immense amount of work to be done before planting time.

Two very important resolutions were passed. The board of directors reaffirmed the policy of the association in attempting to secure a separate canning code. This was their reply to joint resolution requesting them "to immediately end this obstruction" to the Master Code, for distribution in the food manufacturing field, presented by National Association of Retail Grocers, National-American Wholesale Grocers' Association, Food and Grocery Chain Stores Association, National Retailer Owned Wholesale Grocers' Association, and National Voluntary Grocers' Institute.

The association as a whole reaffirmed this resolution of 1928 opposing split brokerage, stating that brokerage is an element of cost, not of price.

Definitions AND *Standards*

The following definitions and standards for food products have been adopted as a guide for the officials of this department in enforcing the food and drugs act. These definitions and standards include those published in S. R. A., F. D. 2, revision 3, and those adopted May 12, 1933.

HENRY A. WALLACE, *Secretary of Agriculture,*

WASHINGTON, D. C., Aug. 1, 1933.

THESE DEFINITIONS are so framed as to exclude substances not mentioned in the definition and in each instance imply that the product is clean and sound.

● Definitions and standards pertaining to Animal Products were published in the January issue of Food Industries, pp. 26-28. Divisions: A. Meat and the Principal Meat Products, and B. Milk and Milk Products, were dealt with. In the course of the next few months Food Industries plans to publish those that have been adopted.

● Under Secs. 11 and 22 of the Copeland Bill (S. 2000) (see pp. 69-71 of this issue) these specifications may be designated as being the law of the land with such changes as the Secretary of Agriculture may announce from time to time after a 30-day notice and a public hearing.

● Consumer organizations are being requested by the Food Standards Committee of the Food and Drug Aministration to study the existing definitions and to make comment from the consumer point of view.

● Familiarize yourself with them, make your recommendations to the Food Standards Committee of the Department of Agriculture, and be prepared, if necessary, to attend public hearings and take a hand in formulating definitions and standards for the foods you manufacture.

● Copies of these definitions and standards can be obtained from the Department of Agriculture. Address your request to W. S. Frisbie, Chairman, Food Standards Committee, Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C.—Editor.

II. VEGETABLE PRODUCTS

A. Grain Products

a. GRAIN AND FLOURS

1. Grain is the fully matured, air-dry seed of wheat, maize, rice, oats, rye, buckwheat, barley, sorghum, millet, or spelt.

2. Rice is the hulled, or hulled and polished, grain of *Oryza sativa L.*

a. Brown rice is the hulled, unpolished grain.

b. Polished rice, "rice," is the hulled grain from which the bran or pericarp has been removed by scouring and rubbing.

3. Meal is the product made by coarsely grinding grain.

4. Maize meal, corn meal, Indian-corn meal, is meal made from maize grain and contains not more than 14 per cent of moisture, not less than 1.12 per cent of nitrogen, and not more than 1.6 per cent of ash.

5. Oatmeal is meal made from hulled oats, and contains not more than 12 per cent of moisture, not more than 1.5 per cent of crude fiber, not less than 2.24 per cent of nitrogen, and not more than 2.2 per cent of ash.

6. Flour, wheat flour, white flour, is the fine-ground product obtained in the commercial milling of wheat, and consists essentially of the starch and gluten of the endosperm. It contains not more than 15 per cent of moisture, not less than 1 per cent of nitrogen, not more than 1 per cent of ash, and not more than 0.5 per cent of fiber.

7. Whole-wheat flour, entire-wheat flour, graham flour, is the product made by grinding wheat, and contains, in their natural proportions, all of the constituents of the cleaned grain.

8. Gluten flour is the product made from wheat flour, by the removal of a large part of the starch, and contains not more than 10 per cent of moisture and, calculated on the water-free basis, not less than 7.1 per cent of nitrogen, not more than 56 per cent of nitrogen-free extract (using the protein factor 5.7), and not more than 44 per cent of starch (as determined by the diastase method).

9. Ground gluten is the product made from wheat flour by the almost complete removal of starch, and contains not more than 10 per cent of moisture and, calculated on the water-free basis, not less than 14.2 per cent of nitrogen, not more than 15 per cent of nitrogen-free extract (using the protein factor 5.7), and not more than 5.5 per cent of starch (as determined by the diastase method).

10. Purified middlings is the granular product obtained in the commercial process of milling wheat, and is that portion of the endosperm retained on 10 XX silk bolting cloth. It contains no more flour than is consistent with good commercial practice, nor more than 15 per cent of moisture.

11. Semolina is the purified middlings of durum wheat.

12. Farina is the purified middlings of hard wheat other than durum.

13. Buckwheat flour is bolted buckwheat meal, and contains not more than 12 per cent of moisture, not less than 1.28 per cent of nitrogen, and not more than 1.75 per cent of ash.

14. Rye flour is the fine-ground product made by bolting rye meal, and contains not more than 13.5 per cent of

*Revision 4, Service and Regulatory Announcements, Food and Drug, No. 2, issued August, 1933, by Food and Drug Administration, United States Department of Agriculture.

..... FOR FOOD *Products**

moisture, not less than 1.36 per cent of nitrogen, and not more than 1.25 per cent of ash.

b. BREADS

1. Bread is the product made by baking a dough consisting of a leavened or unleavened mixture of ground grain and/or other edible farinaceous substance, with potable water, and with or without the addition of other edible substances.

2. White bread is the product, in the form of loaves or smaller units, obtained by baking a leavened and kneaded mixture of flour, water, salt and yeast, with or without edible fat or oil, milk or a milk product, sugar and/or other fermentable carbohydrate substance. It may also contain diastatic and/or proteolytic ferments and such minute amounts of unobjectionable salts as serve solely as yeast nutrients.[4] The flour ingredient may include not more than 3 per cent of other edible farinaceous substance. White bread contains, one hour or more after baking, not more than 38 per cent of moisture. The name "bread" unqualified is commonly understood to mean white bread.

3. Whole-wheat bread, entire-wheat bread, graham bread, is the product, in the form of loaves or smaller units, obtained by baking a leavened and kneaded mixture of whole-wheat flour, water, salt, and yeast, with or without edible fat or oil, milk or a milk product, sugar and/or other fermentable carbohydrate substance. It may also contain diastatic and/or proteolytic ferments, and such minute amounts of unobjectionable salts as serve solely as yeast nutrients.[4] It contains, one hour or more after baking, not more than 38 per cent of moisture.

4. Milk bread is the product, in the form of loaves or smaller units, obtained by baking a leavened and kneaded mixture of flour, salt, yeast, and milk or its equivalent (milk solids and water in the proportions normal to milk); with or without edible fat or oil, sugar and/or other fermentable carbohydrate substance. It may also contain diastatic and/or proteolytic ferments, and such minute amounts of unobjectionable salts as serve solely as yeast nutrients.[4] The ingredient may include not more than 3 per cent of other edible farinaceous substance. Milk bread contains, one hour or more after baking, not more than 38 per cent of moisture.

5. Raisin bread is the product, in the form of loaves or smaller units, obtained by baking a leavened and kneaded mixture of flour, water, salt, yeast, and raisins, with or without edible fat or oil, milk or a milk product, sugar and/or other fermentable carbohydrate substance. It may contain diastatic and/or proteolytic ferments, and such minute amounts of unobjectionable salts as serve solely as yeast nutrients.[5] The flour ingredient may include not more than 3 per cent of other edible farinaceous substance. The finished product contains not less than 3 oz. of raisins to the pound.

6. Boston brown bread is the product, commonly in the form of cylindrical loaves, obtained by steaming or baking a leavened mixture of rye flour or meal, corn meal, a wheat flour, molasses, salt, water, and/or a milk product, with or without raisins. Leavening is commonly effected through the use of baking powder or sodium bicarbonate and sour milk.

c. MACARONI AND NOODLES

1. Macaroni is the shaped and dried doughs prepared by adding water to one or more of the following: semolina, farina, wheat flour. It may contain added salt. In the finished product the moisture content does not exceed 13 per cent. Various shapes of macaroni are known under distinguishing names, such as spaghetti, vermicelli.

a. Semolina macaroni is macaroni in the preparation of which semolina is the sole farinaceous ingredient.

b. Farina macaroni is macaroni in the preparation of which farina is the sole farinaceous ingredient.

2. Noodles, egg noodles, are the shaped and dried doughs prepared from wheat flour and eggs, with or without water and with or without salt. The egg ingredient may be whole egg and/or egg yolk. In the finished product the moisture content does not exceed 13 per cent and the egg solids content upon the moisture-free basis is not less than 5.5 per cent. Noodles are commonly ribbon shaped.

3. Plain noodles are the shaped and dried doughs prepared from wheat flour and water, with or without salt. In the finished product the moisture content does not exceed 13 per cent. Plain noodles are commonly ribbon shaped.

B. Fruit and Vegetables

a. FRUIT AND FRUIT PRODUCTS

(Except wines and vinegars)

1. Fruit is the edible, fleshy fructification of a plant, and is characterized by its sweet, acid, and/or ethereal flavor.

2. Fresh fruit is fruit which has undergone no material change other than ripening since the time of gathering.

3. Citrus fruits:

a. Grape fruit, pomelo, is the mature fruit of *Citrus grandis* Osbeck. The juice of the mature fruit contains not less than 7 parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

b. Orange (common, sweet, or round) is the mature fruit of *C. sinensis* Osbeck. The juice of the mature fruit contains not less than 8 parts of soluble solids to each part of acid calculated as citric acid without water of crystallization.

4. Evaporated apples are peeled, cored and sliced apples from which the greater portion of the moisture has been evaporated. The finished product contains not more than 24 per cent of moisture.

5. Dried apricots are halved and pitted ripe apricots from which the greater portion of the moisture has been evaporated. Before packing, the dried fruit is commonly processed by washing. The finished product contains not more than 26 per cent of moisture.

6. Dried peaches are halved and pitted ripe peaches from which the greater portion of the moisture has been evaporated. Before packing, the dried fruit is commonly processed by washing. The finished product contains not more than 26 per cent of moisture.

7. Dried prunes are whole ripe prune plums from which the greater portion of the moisture has been evaporated. Before packing, the dried fruit is commonly processed by treatment with boiling water or steam. The finished product contains, in the fleshy portion, not more than 25 per cent of moisture.

8. Cold-pack fruit is the product obtained by packing, in a suitable container, properly prepared fresh fruit, with or without the addition of sugar and/or dextrose, and maintaining it at a temperature sufficiently low to insure its preservation.

9. Preserve, fruit preserve, jam, fruit jam, is the product made by cooking to a suitable consistence properly prepared fresh fruit, cold-pack fruit, canned

(Turn to page 96)

[4] The propriety of the use of minute quantities of oxidizing agents as enzyme activators is reserved for future consideration and without prejudice.

[5] The propriety of the use of minute quantities of oxidizing agents as enzyme activators is reserved for future consideration and without prejudice.

Possibilities of Truck

S-T-R-E-A-M-L-I-N-I-N-G

For Work in the Dairy Industry

WHICH large dairy company will be the first to use streamlined tank trucks to haul its milk from country areas to city pasteurizing plants or distributing stations? If this sounds like one of those foolish questions from one of Rube Goldberg's comic cartoons, just take a look at these two pages.

The illustrations show the first fully streamlined tank truck only recently built by the Diamond-T Motor Car Co., of Chicago, to the special order of the Texas Co. for the delivery of gasoline. Its revolutionary exterior design and many of the features of the chassis construction are the developments of H. W. Kizer, superintendent of automotive equipment of the Texas Co., and C. A. Peirce, chief engineer of the Diamond-T Motor Car Co. Coming just prior to the introduction of several revolutionary streamlined passenger cars, notably the Chrysler, at the national automobile shows, it may not be foolish to inquire into the possibilities of the use of such streamlined trucks in the food industries.

The main purpose of streamlining, most highly developed in airplane design, is to reduce wind resistance. Wind resistance increases as the square of the speed. Thus if the speed is doubled, the wind resistance is increased four times; if the speed is increased three times, the wind resistance is increased nine times, and so on.

It takes a part of the airplane engine horsepower to overcome this wind resistance. The smaller the horsepower required to overcome wind resistance, the greater is the horsepower remaining to actually propel the plane through the air. Hence the greater speeds with better streamlined airplanes with engine horsepowers remaining constant.

As to the actual streamlining itself, wind-tunnel tests have shown that the horsepower required to move a flat plate through the air at a given speed is the same as required to move a fully streamlined body of sixteen times the cross-sectional area at the same speed. These two factors, the increase of wind resistance as the square of the speed and the relationship between the horsepower required for flat or fully streamlined bodies of much greater frontal area, clearly indicate the importance of streamlining as a means of reducing engine horsepower for the same speed or increasing the speed with the same horsepower.

The same principles of airplane streamlining may be applied to truck transportation as a means of reducing truck-operating costs. If a given conventional truck has a certain sized engine to provide a desired road speed, a fully streamlined truck of equal gross weight would require a much smaller engine to provide an equal road speed under the same conditions. Smaller engines giving equal performance mean lower fuel consumption and reduced operating costs. Or, on the other hand, the same engine in a streamlined truck will provide greater road speeds if desirable.

However, in order that the importance of streamlining in truck work shall not become exaggerated, it must be borne in mind that there is no comparison between airplane speeds of from 100 to 200 miles per hour and ordinary truck speeds. At truck speeds of 30 miles per hour or less, air resistance is not important, especially if the loads are small.

But when truck speeds increase to 45 and 50 miles per hour and the weight and bulk of the truck and its load reach 40,000 to 50,000 lb. gross, the engine horsepower required to overcome wind resistance becomes of great importance. In some cases even the largest gasoline engine procurable is not sufficiently powerful to provide the road speeds desired. In such instances, proper streamlining will solve the problem without waiting for further increases in engine power.

From the preceding observations, the immediate application of streamlined trucks in the food industries will not be of the greatest value in ordinary city deliveries where loads are small and road speeds are low. Instead, the greatest advantages will be obtained in overland hauls, where maximum loads and speeds are essential to low unit truck costs. In the dairy field, country milk hauls offer an immediate opportunity. The long-distance tank haulage of beer, ice-cream mix, syrups, and the like, may be possibilities. In fact, future development may lead to the design of modified box-type bodies on long-distance streamlined trucks where

side loading and unloading is possible.

If a streamlined milk tanker similar to the Texaco design were employed on country milk hauls, its greatest immediate value to its owners would be in its advertising value. The Texaco truck has been a sensation wherever it has appeared and has attracted widespread attention.

The newness of its development and lack of quantity production of such a streamlined truck modified to suit milk-haulage conditions would not result in immediate reduction in haulage costs. This is the result of a higher first cost as compared with a conventional tanker of equal capacity. However, there is nothing fundamental in the design to increase costs to any important extent on a production run except the sheet metal work, special double-curved glass in the cab and the air controls, which will be described more fully.

The Texaco truck has a 1,500-gal. tank and, when loaded, weighs about 25,000 lb. gross. Additional capacity to 2,200 or 2,500 gal., such as carried at the present time on some semi-trailer and six-wheeled trucks, might be obtained in the streamlined design by the addition of a third axle.

Future development of this type of truck undoubtedly will retain the essential principles of streamlining as shown, but may include changes in the means of propulsion. Some designers have retained the engine at the front; others have boldly shifted it to the rear; while at least one other, using two engines, has placed them amidships between the axles, partly below the frame, one on each side.

In the Texaco design the engine was placed at the rear for certain definite reasons. Perhaps the most important of these is that a true streamlined body requires a considerable length of smooth taper at the rear in order to minimize any currents and vacuum which otherwise would occur at this point and cause the greatest amount of drag. Since the engine mounted longitudinally on the chassis center line fits very nicely into the tapering tail, its location there utilized space which otherwise would have been wasted.

The rear-end engine location also eliminated the long propeller shaft which would have been necessary to connect the engine with the rear driving axle if the engine had been located in the front. The elimination of the propeller shaft, along with the use of a double-drop chassis frame, permits the 1,500-gal. tank to be set extremely low and gives a low center of gravity for increased safety in driving and an over-all height of only 79 in. with a wheelbase of 140 in. and an over-all length of 312 in. The frontal area of the Texaco truck is only slightly more than one-half that of the conventional truck of the same capacity.

However, the rear location of the engine with its clutch and gearset required a change from the conventional manual clutching and gearshifting. In the Texaco design compressed air produced by a compressor driven by the engine is used to operate the clutch from a standard pedal in the driver's cab and also the gearshifting from a miniature shifting lever mounted on the steering column. Air is used also for the truck brakes and signal horn.

The design has one other very important advantage in that 45 per cent of the gross weight is carried on the front axle and 55 per cent on the rear. Where state laws restrict axle loads, this permits greater gross and payloads as compared with the conventional truck, which usually can carry less than one-quarter of the gross load on the front axle. The greater load on the front axle of the Texaco truck resulted in power steer, air also being used for this purpose.

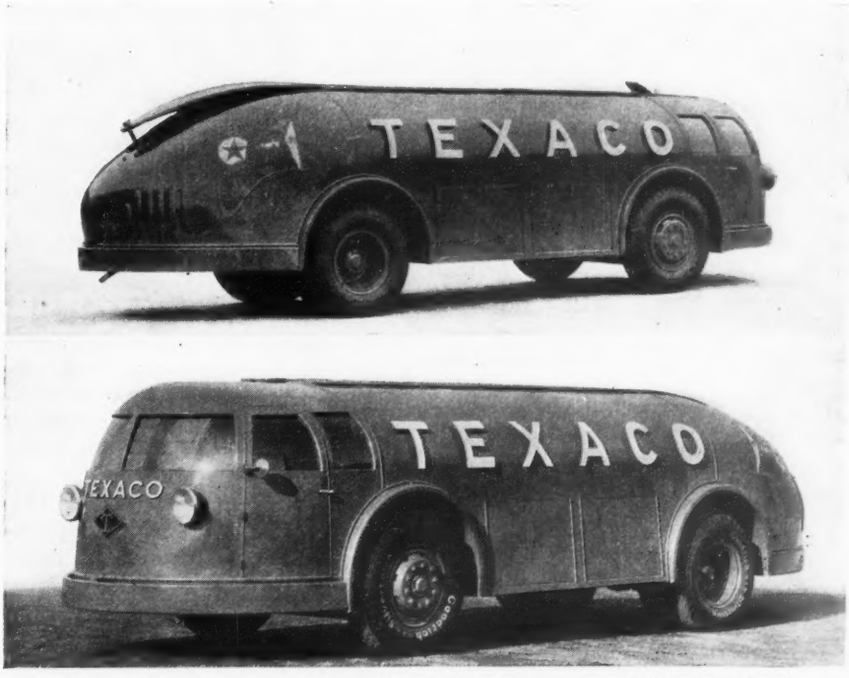
Brockway Show Creates Much Interest

The Brockway motor transportation show, which closed in New York City, Jan. 16, after an 11-day run, drew a record attendance of 52,500. The largest attendance for any one day occurred on Wednesday, Jan. 10, when 7,400 persons viewed the up-to-date trucks, tractors, trailers and body equipment on exhibit.

Many of the vehicles shown were of interest to truck users in the food field and included retail milk and bread-route units with new and improved body types mounted on electric chassis with improved types of controllers. A large tractor and semi-trailer outfit carrying an improved type of tank constructed exclusively for country milk hauls excited a great deal of interest. Another exhibit included a 12-cylinder V-type engine tractor suitable for long-haul transportation of milk, ice cream, or any other food products.

The show has begun a tour through the Eastern states and will make stands as follows:

Newark	Feb. 2-4	Buffalo	Feb. 24-27
Phila.	Feb. 6-10	Roches'r	Mar. 1-4
Balt're	Feb. 12-15	Syra'se	Mar 7-10
Pitts.	Feb. 19-21		

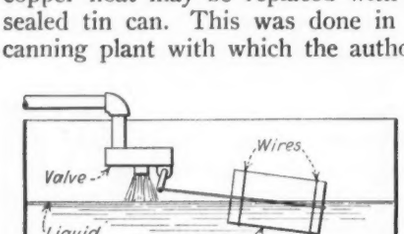


Three-quarter rear (at top) and front views of the new, fully streamlined, 1,500-gal. tank truck built for the Texas Co. by the Diamond-T Motor Car Co., Chicago. The truck has its engine in the taper at the rear. It uses air for front-wheel steer, brakes, remote clutching and gearshifting and signal horn. The front tires, 11.25, are larger than the dual rear tires, each 9.75. The manufacturer is in a position to build trucks to the same general design for any other business except gasoline and oil, the development in which the Texas Co. reserves the design for its own use. Read the accompanying story for the possibilities of the use of such trucks by the dairy industry for long-distance country milk hauls.

IDEAS . . . FROM PRACTICAL MEN

Can Replaces Copper Float

When operations in a plant are impeded by a leak in the copper float on a liquid-level control valve, there is an easy way out of the difficulty. The copper float may be replaced with a sealed tin can. This was done in a canning plant with which the author



was connected, a No. 10 can being used.

Replacing the float stem with a longer rod, this was extended along the side of the can to the end and then bent across the end and back on the other side. Wires were placed around the can to hold it in place. So satisfactory was this arrangement that the copper float was not put back.

H. A. PRATT, *Williamson, N. Y.*

Bucket Test Reveals Waste

Heat losses incurred in discharging hot water and condensate into the sewer often represent an appreciable part of the total steam generated in a plant. A check on these losses easily can be made with a bucket, a watch and a thermometer, as it was in one large pea and corn cannery. In this plant, steam was admitted through mixing tees to the wash after the blancher to avoid excessive cooling of the peas.

Using a 4-gal. pail to measure the water, the following data were obtained:

Time required to fill pail, 6 sec.
Temp. of water leaving spray pipe, 90 deg. F.
Temp. of water entering mixing tees, 48 deg. F.
Temp. rise of water, 42 deg. F.
Gallons of water per minute, 40.

Since one gallon of water weighs approximately 8.3 lb., and as 1 lb. of steam contains roughly 1,100 B.t.u., the steam consumtion per hour was

$$\frac{40 \times 8.3 \times 60 \times 42}{1{,}100} = 760 \text{ lb.}$$

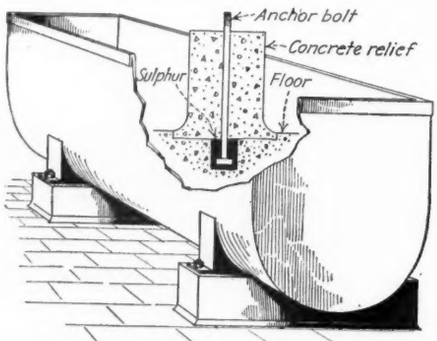
With the boilers operating at 150 per cent of rating, the steam used in this operation was equivalent to about 16 installed boiler horsepower. There being an average of five blanchers operating in the plant, the total steam consumption of this operation amounted to approximately 80 boiler horsepower.

Examination disclosed that the spray equipment consisted of perforated pipes with $\frac{1}{8}$-in. holes to avoid stoppage from scale. Tests with spray nozzles revealed that these gave a more efficient wash with slightly more than half the water consumption. Moreover, they required no steam to heat the wash water, thus making the 80 boiler horsepower available for other purposes and saving approximately 80 tons of coal during the pack.

S. H. COLEMAN, *Waynesboro, Va.*

Floor Reliefs Aid Cleaning

In food plants, where cleanliness is godliness, some machines are so close to the floor that proper cleaning about their bases is difficult, if not impossible. Raising the machines



from 2 to 5 in., as shown in the sketch, often will eliminate hours of cleaning time—to say nothing of improving the sanitary conditions.

The same results may be obtained on wood floors by using a solid wood timber and embedding it in asphalt cement.

HARRY STINER, *New York, N. Y.*

CASH IN YOUR IDEAS

FOOD INDUSTRIES pays $3 or more for each item accepted for the "Ideas From Practical Men" department. Contributions from any plant man are welcomed. A brief description of the 'idea" and free-hand sketches, where needed, are sufficient. Send them in.—THE EDITORS.

Water Tank Saves Power

Continuous pumping of boiler-feed water sometimes becomes expensive. In one plant, a saving of $600 per year, plus a lower power demand factor, resulted from the installation of a 10,000-gal., elevated storage tank costing $800. Prior to the installation of the tank, two 50-hp., motor-driven pumps operated at full rating during peak periods, and one was kept in operation continuously, although it carried only quarter load during some hours of the night. With the tank in service, it was not necessary to run both pumps at any time, and both were shut down from 11 p.m. to 6 a.m. During the time that one was in operation, it carried a steady load at its most efficient point of operation.

N. T. PEF, *Chicago, Ill.*

Cross Baffling Saves Fuel

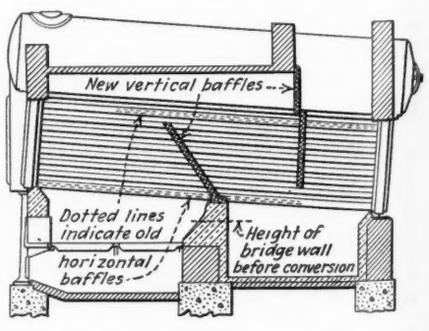
More effective heat absorption and a material increase in efficiency can be effected by changing from horizontal to cross baffling in a horizontal tube boiler. One plant in Ausable Forks, N. Y., saved an average of 20 tons of fuel monthly by such an alteration.

Steam for this plant was generated in two 190-hp. horizontal tube boilers. By investing $417 in reconstructing the baffling, the efficiency was stepped up to a point where four months' operation wrote off the cost of remodeling. This plant has a monthly fuel consumption of 100 tons.

The change involved increasing the height of the bridge wall, tearing out the old baffles, and installing the new cross baffles, as indicated in the diagram.

Cross baffling should be used also with vertical tube boilers.

W. F. SCHAPHORST, *Newark, N. J.*



NEW PRODUCTS—

—NEW METHODS

Nut Margarin Goes Native

Using cottonseed oil and peanut oil as the chief ingredients, in addition to milk, Capital City Products Co., Columbus, Ohio, is manufacturing a "nut" margarin which contains no imported oils. This Dixie margarin is a result of two years of experiment and development, and the secret of the product lies in the method of processing the vegetable oils that go into it. Coconut oil imported from the Philippines has been widely employed as the principal oil constituent of nut margarin.

Tuna Is Packed in Aluminum After Extensive Tests

After four years in California and Pennsylvania laboratories, and a short test excursion into a few representative markets, aluminum cans last month arrived in New York packed with tuna fish from Point Loma, Calif.

Point Loma Tuna Packers, cooperating with Aluminum Co. of America, made up their first batches of aluminum-packed tuna in 1929. Corresponding batches were put in tin, and in the succeeding years similar batches in tin and aluminum were packed every three months, and at varying intervals each batch was subjected to scientific comparisons of taste, color, odor, texture and purity. These tests bore out a consistent superiority on the part of the aluminum pack, it is reported. Consumer tests indicated that the housewife would pay a slight premium for the aluminum-packed tuna, and a commercial pack of some 100,000 cans now enters the market.

As packers' ware, aluminum has the advantage of being neutral, eliminating the necessity of a lacquer coating. Also, aluminum cans are easily opened, owing to the softness of the metal. Furthermore, aluminum, being light, saves 4 lb. per case on the freight bill. A disadvantage is the 15 per cent higher cost.

These aluminum cans are die-formed and only the top is soldered on. When opened, they have reuse value. Another feature is a "grid" bottom that is said to prevent all the oil from being forced up the sides of the can and leaving the bottom dry.

Glass Tumbler Proves Worth As Container for Cheese

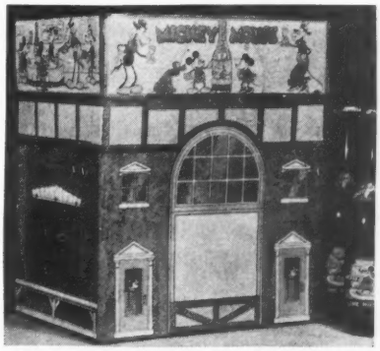
Introduced only a short time ago, the reusable glass tumbler is becoming widely employed as a container for cheese. Borden and Kraft-Phenix are now packing five varieties in glass, and other dairies also are using it. According to John H. Platt, advertising manager for Kraft-Phenix, the glass is among the "most successful packages ever used by the company in marketing its packaged cheese."

Of particular interest is the new closure used with the Kraft-Phenix "Swankyswig" cocktail cheeses, shown in the illustration. Made from tin plate, the cap is held on by a vacuum within the container. This closure, known as the White Top seal, has the advantage of being easily removed. The consumer merely punches a hole in it to relieve the vacuum and lifts it off. If a defect in the package admits air, the cap will not remain in position and the defect will be noticed. The practicality of the closure is indicated by production results. Out of 31,000 jars put through in a typical 8-hour run, only 155 were rejected, 120 failing on account of slight irregularities in the glass finish.

Packing cheese in glass tumblers requires a special capping machine and extra care in handling to avoid breakage, especially with thin tumblers. This method of packing is said by a representative of one large company to be more expensive than packing in any type of foil and cardboard container, but evidently the extra cost is worth while.

To enhance the eye appeal of its dehydrated "Calgold" raisins, El Solyo Ranch, Vernalis, Calif., is now putting them up in this transparent cellulose package by the hole-in-board method.

Triplewrapt Sweets, introduced by H. D. Foss Co., Cambridge, Mass., is a confection with three-point protection against staling. The box is lined and padded, and then is covered with heat-sealed wax paper and moisture-proof vegetable parchment paper.



"Mickey Mouse" carbonated beverages, bottled by Ludford Fruit Products, Inc., Hollywood, Calif., are often bought by the carton. The cartons contain cut-out sheets of bottling plants, garages and grocery stores. Here is a line of beverages with a "personality."

Easy-opening cans have been adopted by Sussman, Wormser & Co., San Francisco, for fruit and asparagus. Western Can developed these tins.

What Food Men Are Doing

Best Canners' Convention in Years Held at Chicago Jan. 15-19

The most unusual and important convention in the history of the National Canners' Association was held Jan. 15-19 at the Stevens Hotel in Chicago; that is, the convention was officially dated for this four-day period. Actually the canners arrived for the most part on Jan. 11 and immediately went into continuous sessions to formulate plans for marketing agreements under A.A.A. That the program had almost no set addresses was the unusual feature, for, aside from the "official" opening assembly on Jan. 15, almost all of the sectional meetings were continuations of commodity marketing agreement plans already under way.

Since the transfer of canning back to N.R.A., the industry is proceeding to formulate a code under this authority, but is also working out a series of marketing agreements under A.A.A. The latter is regarded as extremely desirable if not actually necessary to prevent overproduction of canned fruits and vegetables in 1934 arising from the stimulus of moderate profits from 1933 operations. The latter, admittedly due to the corrective effect of unfavorable weather conditions last year, which reduced production of many commodities, has changed the psychology of the entire industry from one of despair to one of optimism. In respect to the canners' marketing agreements, observers at Washington do not expect decisive action soon enough for the agreements to be effective in 1934.

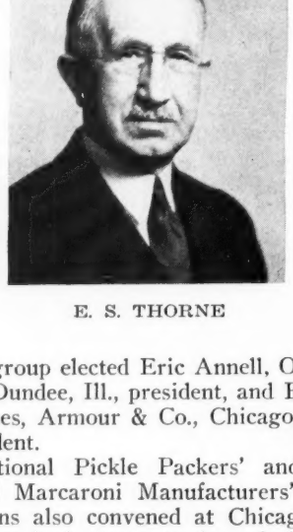
Canning machinery and supply men exhibited their products at the canners' convention, displaying an extensive line and doing much business.

The association elected as president for 1934 E. S. Thorne, Geneva Preserving Co., Geneva, N. Y., who replaces Marc C. Hutchinson. Howard A. Orr, Winorr Canning Co., Circleville, Ohio, was chosen first vice-president; Leonard E. Wood, California Packing Corp., San Francisco, second vice-president; and Frank E. Gorrell, Washington, D. C., secretary-treasurer.

Canners chosen to act as chairman of the various sections of the association include:

E. A. Meyer, Biglerville, Pa., Apple and Apple Products; J. E. DoMaster, Sheboygan, Wis., Beet; James Stoops, Van Wert, Ohio, Corn; John M. Stroup, Phelps, N. Y., Kraut; W. J. Foell, Chicago, Meat; C. O. Davidson, Horicon, Wis., Pea; H. E. Rathfon, Rodkey, Ind., Tomato and Tomato Products; and T. C. Willson, Fremont, Mich., Wax and Green Beans.

Other food groups also met at Chicago during the week of Jan. 15. Evaporated Milk Association at its annual meeting voted to continue research and educational work for another six months. Reports compiled at the meeting indicated an increase of 2 per cent in the sale of evaporated milk during the year.



E. S. THORNE

The group elected Eric Annell, Oatman Co., Dundee, Ill., president, and Eugene Hughes, Armour & Co., Chicago, vice-president.

National Pickle Packers' and National Marcaroni Manufacturers' associations also convened at Chicago, reporting the largest attendance in history at their special meetings.

Dairymen Ask Tax on Oils

National Dairy Union is urging imposition by Congress of tariff-taxes of 2.5 to 5c. a pound on imported oils. Support of the cotton bloc is sought on the theory that exclusion of foreign oils would force cottonseed oil into the soap kettle. The dairymen's move also is intended to offset overtures made to cotton farmers by margarin manufacturers promising increased use of cottonseed oil if they will line up for repeal of federal and state taxes on margarin.

HOWARD A. ORR

Much Activity, Few Results On Food Industry Codes

Aside from President Roosevelt's order transferring all but first-processing codes from A.A.A. to N.R.A., there are few tangible results to show for the past month's activities on codes for the food industries. The big fireworks came at the hearing on the millers' code, which is discussed on page 75. Running a close second was the attack of the distribution code authorities upon the canners for holding out for a separate code and blocking—so the distributors declared—their code. Probably the most pleasing news from the code front came when the A.A.A. announced its intention to withdraw from all codes under its supervision the vexing provisions which industry has been unable to accept, such as the provisions of the "Tugwell" bill.

At a meeting of New York State bottlers, Junior Owens, secretary of A.B.C.B., pointed out that the fourteenth official draft of the beverage code had been made, and indicated that more drafts would be forthcoming. As it now stands, the code is satisfactory to both the bottlers and the Administration, except on one count, price stabilization. The bottlers are pressing for the ultimate in price regulation, but such control is contrary to the policies at Washington.

A hearing on the proposed code for the vinegar industry was held Jan. 9, the code being presented by Eastern Cider Vinegar Association and American Vinegar Association, representing 80 per cent of the industry east of the Mississippi and 90 per cent west of it.

At the session, distilled vinegar manufacturers presented an amendment to exclude from the code white distilled vinegar of 70 grain proof or more. Manufacturers of cider vinegar, of course, objected to the amendment. Another amendment came up, this to include sweet and fermented cider.

Scheduled for a hearing on Jan. 30, the bakers' code, submitted by National Bakers' Council, contained a big stumbling block in its clause prohibiting the return of stale goods. National Macaroni Manufacturers' Association has completed the code for the alimentary-paste industry and has submitted it to Washington. Other code activities in January included hearings on the proposed plans of fair competition for the fresh oyster industry, Jan. 22; the California sardine processing industry, Jan. 29; and the tapioca dry products industry, Jan. 23.

The code for the canners is scheduled for a public hearing Feb. 7 and that for the confectioners Feb. 20.

Chicago's Milk Strike Ended By Agreement to Pay $1.85

In the most serious of the long line of milk wars, striking producers in the Chicago milk shed early in January blocked the city's supply until less than 20 per cent of the usual volume got through. Stores were practically without milk, hospitals were short and no deliveries were being made to homes. Called by Pure Milk Association on Jan. 6, the strike continued until Jan. 10, when it was agreed to name a price-fixing committee.

The new price schedule became effective Jan. 17, stipulating payment of $1.85 per 100 lb. for fluid milk. This amounts to about 3.98c. a quart, as compared to 4.5c. before the strike.

Difficulty is seen in enforcing prices. If necessary, the A.A.A. is ready to license the distributors and enforce a price of $1.70.

Corn-Hog Program Is Down, But by No Means Out

The corn and hog program of the A.A.A. has run into an apparent slough with the drop in pork prices. At A.A.A., however, while regretted, this development is regarded as inevitable, as the pigs which were slaughtered to a tune of 7,000,000 would not have come into the market until March. The actual effect on the price of pork and pork products is not due until then, and it is anticipated that when that time comes, the resulting shortage will balance up the present drop.

Meanwhile, negotiations have gone forward with Great Britain, on the basis of the exchange of liquor markets here for pork markets there, and the increase in the British quota for American pork products from 6.2 to 6.5 per cent will give approximately $1,000,000 additional outlet.

A.A.A. Will Try New Milk Control Plan; To Be Given First Test in New York

Having discarded into the limbo of unworkable schemes its original milk control program, the A.A.A. will strike out in a much different direction in a new move to solve the country's pressing dairy problem. All existing milk-shed agreements were officially terminated Feb. 1 and the control program begins anew.

The first trial will be made in the New York-New Jersey area after the whole question has been aired and accepted at a hearing to be held in New York City on Feb. 5.

Price schedules for producers, to be arrived at during the conference, are to be based upon five classes of milk: (1) all whole fluid milk; (2) milk used for cream and manufactured into condensed milk; (3) milk used for ice cream, evaporated milk, milk chocolate, powdered milk and cheeses excluding American; (4) milk for American cheese; (5) all milk not included in other classes. The new plan will place emphasis on producers' prices and will not regulate wholesale and retail prices except perhaps in rare instances where such a step is necessary to insure suitable producers' prices or to protect consumers.

Newcomers into the field, who have not sold milk in the area for 30 consecutive days during 1933, must, for 90 days, accept the price of Class 5 milk for all their products.

There will be production control and it is hoped that prices will be raised as a result of such control, the methods of which are to be announced later together with the processing tax (reported generally as starting at 4c. per 100 lb. and rising, in time perhaps to 20c.). And differentials are to be paid above the established prices for producers within the 20-mile zone.

The present price of Class 1 milk in the New York territory is $2.30 per 100 lb.; Class 2, $1.55. A.A.A. has thrown a bombshell into that situation by stating that it estimates that the farmers may, as a result of this plan, get 22c. a 100 lb. less than they do now, and that this saving will be passed to consumers—about ½c. a quart.

In the administration of the new milk program, emphasis will be placed upon local responsibility.

To Air Packaging Problems

Packaging problems which have arisen as the result of the N.R.A. will be discussed by packaging experts and administrators from Washington at conferences to be held in connection with the Fourth Packaging, Packing and Shipping Exposition in New York, March 12-16. And the pros and cons of pending legislation will be taken up. Conferences will be held all the first day, and the mornings of subsequent days will be devoted to conferences and clinics, "the package's part in successful promotion" being the keynote.

Hors d'Oeuvres

IT WOULD SEEM that foreign fishermen believe American consumers take the N.R.A. label seriously. At any rate, some 4,000 cases of Japanese tuna and 4,600 cases of Norwegian sardines have arrived in American ports flying the Blue Eagle.

•

A CHICAGO popcorn company has introduced a popcorn meal for griddle cakes and such. It bears the slogan, "It's fluffy because it pops." The chef that put popcorn in his fritters to make them turn over has been bested at last.

•

WE ALWAYS THOUGHT coffee came from Brazil, but now we learn that it was discovered in Abyssinia and cultivated in Arabia long before the western world began to plant it—not that it makes any difference at breakfast.

•

QUAKER OATS CO. is erecting an aviation beacon on its plant at Saskatoon, Saskatchewan. Aviation enthusiasts say $700 planes soon will fill the air, so perhaps it's well to mark one's property, for protection as well as promotion.

•

CONDITIONED CARP grown in an artificial lake and fed on grain are being shipped from Iowa to New York by Delphys Co. The erstwhile muddy carp are said to have a firm, white flesh similar to that of pike. Now all they need to make people eat them is a fancy name.

•

MAYONNAISE is being advertised as a cooking aid in the preparation of hot dishes; Mazola becomes a "frying" oil; and Canada Dry's "mixing" qualities have been soft pedaled for "children-love-it" copy. Nothing like a new market for an old product.

•

MORE THAN 100 products can be made from the peanut, says Dr. George W. Carver, famous Negro scientist at Tuskegee Institute. So that's what you have in the proverbial nutshell!

Tariff Policy Offers Relief From Processing Taxes

Significant to the food industries is the new philosophy with respect to the tariff that the administration is discreetly revealing. It is the idea of President Roosevelt's executive commercial policy committee to create and restore foreign markets for export industries by opening home markets which domestic industries have been able to supply only by dint of wangling excessive tariff protection.

A multitude of minor industries hanging on only by sufferance would be left to shift for themselves, and the market for such products would be thrown open to foreign nations which reciprocate by purchasing the products of our domestic industries that require large export outlets, such as agricultural staples.

Such a policy never can be applied completely, but it embodies an opportunity to dispense with benefit payments, processing taxes and other devices by which the government has attempted to adjust agriculture, an industry developed on the basis of world supply and demand, to the confines of the domestic market.

The whole proposal hinges on whether tariff making can be taken out of the hands of Congress and made an executive function.

Sugar Will Be Made "Basic," Developments Indicate

It appears quite likely that cane and beet sugar will be added to the A.A.A.'s list of basic commodities and that a processing tax will be levied upon refiners. Early in January, a conference between the administration and members of the industry was called off, Secretary Wallace stating that the A.A.A. would go ahead with the basic commodity idea. Subsequently Senator Costigan, of Colorado, introduced an amendment to the Agricultural Adjustment Act to make sugar "basic." And it is generally conceded that the refiners received a jolt when President Roosevelt put a damper on activities of political lawyers of whom the sugar refiners were clients.

If Senator Costigan's amendment goes through, a processing tax of ½c. a pound is expected. This tax is to be desired by the A.A.A. on two counts. It will make possible benefit payments to growers and it will permit the administration to go further with its corn-processing-tax program.

An example of what the ½c. tax on sugar would mean to the food manufacturers may be seen from the fact that it would cost carbonated beverage bottlers at least $3,000,000 annually.

Other developments on the long troubled sugar front concern world stabilization and Cuba. The State Department has indicated willingness to participate in an international discussion on stabilization of the world sugar market, as desired by the International Sugar Council at Brussels. As for Cuba, its President has signed a decree setting the 1933-34 crop at 2,315,459 long tons, conforming to the international sugar agreement signed at Brussels during the Machado régime.

Defines Lard Substitutes

Vegetable shortenings produced by hydrogenation have been defined by the Interstate Commerce Commission as lard substitutes. The Commission's decision follows a long controversy between the railroads and manufacturers and gives to the latter the advantages of rates which permit solidification in transit and do not, by their terms, exclude lard substitutes.

Bottlers' Tax Hopes Fade

Prospects for repeal of syrup and gas taxes on the soft-drink industry have darkened with the huge deficit shown by the federal budget. The American Bottlers of Carbonated Beverages are still fighting gamely for removal of this handicap from the industry. The excise tax yield of $3,389,000 during the fiscal year ended last June was only 50 per cent of the Treasury's previous estimate, and the bottlers argue that most of the revenue went to pay for expense of collection. When filing the brief for tax relief, Secretary Owens of the A.B.C.B. pointed out that these were the same taxes, in effect, as those taken off the statutes ten years ago.

CONVENTIONS

FEBRUARY

5-6—Potomac States Bakers' Association, Baltimore, Md. Lee L. Robinson, First National Bank, Baltimore, secretary.

5-9—Heating and Ventilating Exposition, 3d International, Grand Central Palace, New York, N. Y. Charles F. Roth, manager.

7—Dairy and Ice Cream Machinery and Supplies Association, annual, Biltmore Hotel, New York, N. Y. C. Earl Breece, 232 Madison Ave., New York, secretary.

8—National Cheese Producers' Association, Plymouth, Wis. R. B. Melvin, Plymouth, Wis., secretary.

19-24—First International Beer and Wine Show, Grand Central Palace, New York, N. Y.

MARCH

12-15—American Society of Bakery Engineers, Edgewater Beach Hotel, Chicago, Ill. Victor E. Marx, 1541 Birchwood Ave., Chicago, secretary.

12-16—Fourth Packaging, Packing and Shipping Exposition, sponsored by American Management Association, Hotel Astor, New York, N. Y.

25-29—American Chemical Society, semi-annual, St. Petersburg, Fla., also Cleveland, Ohio. Dr. Charles L. Parsons, Mills Bldg., Washington, D. C., secretary.

Industries Draw Up, Revamp Marketing Agreements

New marketing agreements are coming into existence and old ones being amended in the A.A.A.'s moves toward controlled production and relieved agriculture. A novel plan has been drawn up to cover asparagus. Applicable to a few crops whose perishability and type of growth allow it, this plan requires that all canners begin and cease packing on specified dates. The size of the pack needed will be estimated and all canners notified to stop when that quota has been reached.

Censuring the industry for lack of cooperation, Secretary Wallace on Jan. 25 terminated marketing agreement negotiations with the meat packers. The Secretary was much displeased with the packers' bids for processing "relief" hogs, and rumors were abroad that the government would take over several packing plants and process its own hog purchases. To iron out the difficulties, a group of packers met with Wallace in Washington on Jan. 29.

Amendments to the marketing agreement and license for the Southern rice milling industry which enable the control committee to establish definite prices for cleaned rice and to determine export prices were approved early in January. And on Jan. 22 a hearing was held on an amendment to control rice production in Louisiana, Arkansas and Texas. The plan calls for a reduction in acreage of about 20 per cent. Benefits to growers participating would come out of a trust fund built up by payments from the millers of 40 per cent of the price on each lot purchased. Those attending the hearing indorsed the proposed control plan.

A marketing agreement for the wine-making industry under which the industry agrees to submit to a parity price plan not later than May 1 was tentatively approved by Secretary Wallace on Jan. 11. The proposed agreement provides for licensing of vintners. In Virginia, North and South Carolina, Pennsylvania and Tennessee peanut millers recently agreed to a proposed marketing agreement which sets a minimum of 3c. a pound on farmers' stock, provided non-conformers are licensed.

Plans for a national program for the citrus fruit industry, providing for restricted marketing of the remainder of the season's crop, were discussed at a meeting of the A.A.A. and two national stabilization committees for oranges and grapefruit on Jan. 13. Action toward the national program will come under existing marketing agreements. The various states already are operating under stabilization programs.

It appears that no decision will be reached this year on the marketing agreement of the olive-oil industry. The agreement submitted to Washington did not meet with approval.

National Labor Board Acts In Food Plant Strikes

Unable to get together on wages, hours and other labor problems, striking workers and food-plant owners have had to put their troubles before the National Labor Board on several occasions recently. Ward Baking Co. and Baur Bros. Bakery, Pittsburgh, had been forced to grant certain concessions to drivers and inside workers as the result of a Labor Board decision. In the case of the Ward company, however, the employees were not satisfied, claiming that the board's decision lowered drivers' wages and remaining on strike. And on Jan. 20 the board ordered the strikers to return to work.

The labor trouble of six Philadelphia bakeries, settled by an agreement with the Labor Board on Oct. 10, came to the fore again as the result of the discharge of certain employees involved in the strike. It was ruled that the bakers should reinstate these men. Involved were General Baking Co., Cushman Baking Co., Huber Baking Co., Freihofer Baking Co., Parkway Baking Co., and Jones Baking Co.

The National Labor Board on Jan. 15 began hearings on the controversy over collective bargaining and wages between Whatcom County Dairymen's Association, a cooperative at Bellingham, Wash., and its teamsters and drivers. Another food company suffered from dissatisfied labor when several employees of Scheur's Baking Co., Scranton, Pa., went on strike Jan. 15. A fishermen's strike in progress since Jan. 4 at Boston was settled near the end of the month, following conferences before Anna Weinstock, of the Department of Labor.

To Buy More Food for Relief

If necessary funds are made available by Congress, the Federal Surplus Relief Corp. plans to buy between 150,000 and 200,000 more hogs. Moreover, the corporation contemplates the purchase and distribution of about 50,000,000 lb. more of beef and 20,000,000 lb. of butter. These figures are based upon anticipated relief needs up to the middle of the summer. Further relief to the butter surplus will result from National Dairy Council's nation-wide campaign to boost the consumption.

Sirovich Drafts Food Bill

Another food and drug bill, the fourth to be presented to Congress, was introduced into the House Jan. 29 by Representative Sirovich, New York. The measure is broadened to cover non-intoxicating and non-alcoholic beverages and cosmetics and is designed to protect consumers, distributors and manufacturers through a system of licensing. Two other new measures, the Copeland bill, and the Black bill, are before the Senate and House, respectively.

The Copeland bill, printed in full on page 69, is favored over the Black bill by the food industries. The latter was drafted under the supervision of Dr. Beal of the U. S. Pharmacopeia.

A.A.A. Inflicts Penalties

One California canning group has lost its license to can cling peaches, and another concern has been ordered to show why its license should not be suspended or revoked. Because Independent Growers' Association packed more than its allotment under the marketing agreement, Secretary Wallace revoked its license, effective Jan. 22. For a similar reason, F. M. Ball & Co., San Francisco, was threatened with the loss of its permit to pack cling peaches.

A third packer to suffer under the whip of the A.A.A., Morgan Packing Co., Austin, Ind., no longer can sell its products to government agents. The company is charged with having neither signed nor complied with the President's reemployment agreement. In Baltimore, Kress Farm Dairy was asked to present evidence to save its license, the A.A.A. charging continued violation of the producers' price schedule.

Kroger's Beasts of Burden

This majestic fleet of tractors and trailers recently was acquired by Kroger Grocery & Baking Co. for its Peoria branch. Each trailer has a capacity of 800 cu.ft. and carries a load of about 16,500 lb. The fleet hauls supplies to stores, principally those in the country.

Alcohol Candy Barred

Repeal of the 18th Amendment did not make legal candy containing intoxicating liquors, according to J. W. Sale, of the Federal Food and Drug Administration. The Food and Drugs Act states that confectionery is adulterated "if it contains . . . any vinous, malt or spirituous liquor or compound." And this clause, designed largely for the protection of children, will continue to be enforced. Two lots of candy containing alcohol were seized in December. (Editorial, p. 482, December, 1933, FOOD INDUSTRIES.)

Concentrates

Malcolm Muir has resigned as division administrator of N.R.A. to devote his full time to his duties as president of McGraw-Hill Publishing Co. Nearly 100 codes were approved under his direction. . . . James D. Dole, chief of the food section of the A.A.A., resigned Jan. 10. . . . Dan Bull, Cream of Wheat Corp., and W. P. Lillard, Snow King Baking Powder Co., have been appointed special advisers to the Industrial Advisory Board.

An amendment to the Farm Act that would make cattle a basic commodity has been introduced into the House by Representative Jones, Texas. . . . The processing tax on hogs became $1.50 per hundredweight, live weight, Feb. 1 and will go to $2.25 March 1. . . . An official bulletin board has been established in the Department of Commerce Building, Washington, and the posting of notices regarding N.R.A. hearings on this board constitutes "due notice."

The New York State Milk Control Board is without authority to revoke the license of a milk dealer, the Appellate Division of the Supreme Court at Albany decided. . . . Governor Conner of Mississippi on Jan. 4 vetoed a 5c. tax on oleomargarine. . . . Validity of a Nebraska law establishing a standard size loaf of bread was upheld Jan. 8 by the U. S. Supreme Court.

Pineapple production this season is expected to be kept within the 8,000,000-case limit. . . . Japanese tuna packers have adopted a resolution to cut 1934 production to a maximum of 500,000 cases. . . . American Association of Cereal Chemists will hold its 1934 annual meeting at Toronto during the week of June 4. . . . The Dairy Industries Exposition will be held this year at Cleveland, Oct. 15-20.

National Alliance of Art and Industry will hold an industrial arts exposition in New York, Feb. 15-March 15. . . . State College of Washington, Pullman, has scheduled a national dairy products scoring contest for March 5-10. . . . Oregon State College, Corvallis, will conduct a short course for canners, Feb. 15-17.

MEN . . . JOBS . . . AND COMPANIES

Industry

ARMOUR & Co. directors elected last month include Frederick H. Prince, Boston, large preferred stockholder, and Elisha Walker, Kuhn, Loeb & Co., New York bankers.

BENTON HARBOR FRUIT ASSOCIATION packing plant, Indianapolis, is to install cold-storage facilities costing $100,000.

BOOTH FISHERIES CO. will pack sardines at its Belfast and Lubec (Me.) plants instead of rebuilding the Eastport plant, recently destroyed by fire.

CALIFORNIA-HAWAIIAN SUGAR REFINING CORP., San Francisco, has purchased employee pension insurance policies at a cost of $500,000 for the first premium.

CAMPBELL SOUP CO. plans to spend $750,000 in the Middle West on additions to plants and equipment during the summer months.

CANADIAN WINERIES, Toronto, last month announced plans to build a manufacturing plant at Lewiston, N. Y.

CITY BAKING CO., Baltimore, plans to construct a two-story addition costing $30,000 to McDonald Baking Co. plant, Newark, N. J.

COCA-COLA CO., Atlanta, has recently ordered 1,000 55-gal. stainless-steel drums for shipping syrup to bottling plants.

CONTINENTAL SUGAR CO. properties in Ohio and Michigan were sold recently to Industrial Securities, Inc., of Toledo, for $983,200, the sale being subject to federal court confirmation.

CRYSTAL ROCK WATER CO., Columbus, Ohio, is now marketing ginger ale in which dextrose instead of sucrose is used.

FROSTED FOODS SALES CORP. will include four new items among the products of its Hillsboro (Ore.) plant: sliced strawberries, sliced peaches, spinach and broccoli.

ADOLF GOBEL, INC., has announced through its president, V. G. Skipworth, that, contrary to press reports, its 99 per cent common stock interest in Jacob E. Decker Sons is not for sale.

GORTON-PEW FISHERIES CO., LTD., Gloucester, Mass., has recently marketed American antipasto, made from fresh American shore mackerel and packed in olive oil and condiments.

HAMPTON CRACKER CO., Louisville, has tripled its former capacity by completing a 150x100-ft. addition to its plant costing $150,000.

HOLLAND-ST. LOUIS SUGAR CO. plant, Decatur, Ind., has been ordered by the federal court at Fort Wayne to be sold at an early date.

KINGAN & Co., Indianapolis, granted wage increases of approximately 10 per cent last month to about 3,000 employees.

MEXICAN MAID CORP., New York, recently began production of tamales with native Mexican cooks; plant capacity is 20,000 daily. Arthur S. Jones is president.

MISSION DRY CO., Chicago, has been renamed Mission Illinois Co.

NATIONAL CHICLE CO., Cambridge, Mass., began production in mid-January with Sky Birds gum.

NORTH EASTERN SUGAR CO. suffered a fire loss of $500,000 to stocks and buildings at its Mount Clemens (Mich.) plant last month; 100,000 bags of sugar were destroyed.

PACKAGE CONFECTIONERY CO., Boston, and Kruger Candy Co., New York, have been recently acquired by Edgar P. Lewis & Sons, Inc.

PRINCE GEORGES BREWING CO., Washington, will erect during the year a plant at Muirkirk, Md., at a cost of $1,000,000.

ROBERTS & OAKES CO., Chicago, will spend $60,000 in remodeling its recently purchased meat packing plant, Marshalltown, Iowa. Operations will start in early spring.

STANDARD BRANDS, INC., has distributed twelve research fellowships for 1934 among leading universities including Columbia, Chicago, Illinois, Yale, Cornell, and Ohio State.

WESTERN DAIRY PRODUCTS CO., Seattle, and Western Dairy Products Co., Inc., Los Angeles, are to be combined in Western Dairies, Inc., Los Angeles.

PERSONNEL

E. ROBERT ANDERSON, Rochester, was elected president and J. R. Van Schoonhoven, Albany, secretary, Empire State Bottlers of Carbonated Beverages, at the January convention.

DONALD BARR, formerly technical adviser to the Soviet Union Canning Trust and later in charge of production for British Canners, Ltd., has recently returned to America.

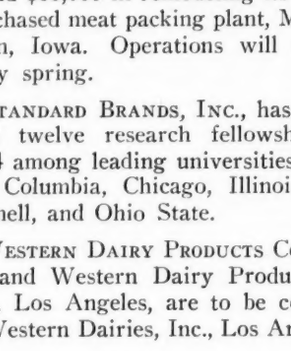
F. A. BUNTE has been elected chairman of Zone 7, National Confectioners' Association, succeeding William Reed; HOWARD STARK, Milwaukee, was elected vice-chairman, succeeding the late Andrew Ziegler.

HUGH J. CAHILL, Cincinnati division manager, Standard Brands, Inc., retired last month after 38 years' service.

WILLIAM S. CLITHERO, formerly vice-president, Armour & Co., Chicago, has become assistant to the president, T. G. Lee.

C. H. CRISWELL, superintendent, Johnstown factory, Great Western Sugar Co., has been transferred to the Denver office, and CLARENCE C. CRAWFORD, assistant superintendent at Johnstown, was appointed superintendent.

F. F. DENT, formerly with Fortune's, Inc., has been appointed manager of



WILLIAM M. ROBBINS
Becomes Walter Baker vice-president

Klinke Bros. Ice Cream Co., Memphis, Tenn.

T. E. DYE, for several years secretary-treasurer, Corn Canners' Institute, Urbana, Ohio, retired Jan. 1. Statistical services rendered corn canners by the institute will be continued by National Canners' Association.

W. G. EPSTEIN, chief chemist, B. A. Eckart Milling Co., is the new chairman, Mid-West section, American Association of Cereal Chemists.

DR. C. N. FREY, Fleischmann Research Laboratories, chairman; E. S. STATELER, FOOD INDUSTRIES, vice-chairman; and DR. H. K. PARKER, Wallace

& Tiernan Co., Inc., secretary-treasurer, were elected for 1934 by the New York section, American Association of Cereal Chemists, at the January convention.

EARL S. HAINES, executive vice-president, National Cottonseed Products Association, has resigned to become executive secretary, Institute of Cottonseed Oil Foods, Memphis. His former duties will be assumed by S. M. HARMON, executive secretary.

C. G. HARREL, product control director, Pillsbury Flour Mills Co., chairman; W. L. RAINEY, Commander-Larabee Corp., vice-chairman; E. N. FRANK, International Milling Co., secretary; and MRS. ROY HANSEN, Minneapolis, treasurer, were elected for 1934 at the annual meeting, Northwest section, American Association of Cereal Chemists, last month.

DAN J. KEELEY, formerly assistant sales manager, Williamson Candy Co., Chicago, has been appointed general manager at the company's Brooklyn plant to succeed the late W. Lee Rooke.

ALFRED KNIGHT, vice-president, Standard Brands, Inc., has resigned, after 33 years with the firm, to devote himself to personal affairs and organization activities.

S. W. LUND, director, Swift & Co. provision department, has resumed his position after work in the meat processing section, Department of Agriculture, Washington, D. C.

DON G. MITCHELL, formerly head, industrial site advertising, McGraw-Hill Publishing Co., and later vice-president and general manager, American Sealcone Corp., is now in charge of the united sales promotion and advertising departments, American Can Co.

E. P. MITCHELL, vice-president, Washburn-Crosby Co., Inc., Buffalo, has been transferred to Kansas City as vice-president and general manager of the company there.

WILLIAM F. MORGAN, JR., president, Brooklyn Bridge Freezing & Cold Storage Co. and Atlantic Fisheries Association, was appointed New York Market Commissioner last month. After being sworn into office, he pledged himself to end racketeering in the markets.

LOUIS W. NELSON, formerly president and general manager, Model Dairy Co., Pueblo, Colo., recently purchased the plant from Beatrice Creamery Co.

LOUIS A. PELTON, formerly sales manager, Grocery Store Products, Inc., has been made general manager, Pompeian Olive Oil Corp., Baltimore.

A. W. PETERS, Hood River, Ore., was elected president, Northwest Canners' Association, at the Seattle convention.

HARRY G. RANDALL, president, Washburn-Crosby Co., has announced his resignation, to take effect on the appointment of a successor.

F. W. BURROWS
Uneeda branch manager passes away

WILLIAM M. ROBBINS, assistant to the vice-president in charge of General Foods Corp. manufacturing, has been elected vice-president, Walter Baker Co., Inc., Dorchester, Mass., succeeding GEORGE H. KELLEY, who has been placed in charge of company manufacturing operations at Los Angeles.

GEORGE H. SWIFT, in charge of eastern Swift & Co. interests, was elected a director and CLIFFORD W. LAWRENCE, credit manager, Chicago, assistant treasurer, recently.

THOMAS WARDELL, formerly treasurer, Wilbur-Suchard Co., Philadelphia, has become night superintendent, Rockwood & Co., Brooklyn.

HERMAN G. WEICKER, Dodge & Olcott, New York, has been elected president, Essential Oil Association of the United States.

DR. SHIRLEY W. WYNNE, retired New York City Health Commissioner, last month was elected president, Greater New York-New Jersey Milk Institute, succeeding Harry A. Cronk, head of Borden's Farm Products Co., Inc.

DEATHS

F. W. BURROWS, 63, manager, Cumberland (Me). branch, National Biscuit Co., last month. He had held his position for the past 27 years and had been with the company for 35 years.

THAD HOFFMAN, 52, president, Flour mills of America, Inc., Kansas City, Dec. 20. He had been with his firm and its predecessor, Kansas Flour Mills Co., since 1912. His brother, Ralph W. Hoffman, has been elected to succeed him.

FRANK H. KULLMAN, 63, vice-president and general manager, Bowman Dairy Co., Chicago, Jan. 16. He leaped or fell from a hotel window; he is believed to have committed suicide. He had been associated with the Bowman company for 43 years, having risen from a clerkship.

J. M. REGAN, 72, co-founder of Regan Bros. Co., Minneapolis bakers, Dec. 31. He was president of the firm until 1929, when the bakery was sold.

W. LEE ROOKE, 52, vice-president, Williamson Candy Co. and general manager, Brooklyn plant, last month at Hamilton, Bermuda. He had been in the confectionery trade for 26 years, being formerly connected with Schutter-Johnson Candy Corp., Chicago. He joined the Williamson company in 1930.

F. W. RUECKHEIM, 88, president, Crackerjack Co., Chicago, Jan. 2. He had been identified with the popcorn business since 1872. In June, 1933, he was honored as the last living charter member of the National Confectioners' Association at its 50th convention.

HARRY E. WEAVER, 45, chief chemist, Flour Mills of America, Inc., Kansas City, Dec. 21. Formerly with Larabee Flour Mills Co. and Arkansas City Milling Co., he was president of the American Association of Cereal Chemists, 1915-17.

ANDREW E. ZIEGLER, president, George Ziegler Co., Milwaukee, Jan. 2. He was vice-chairman, Zone 7, National Confectioners' Association.

Associated Industries

H. J. CARR, Anchor Cap & Closure Corp., Long Island City, N. Y., was elected president, Canning Machinery & Supplies Association, at the Chicago convention in January. NEAL F. SELLS, Sprague Sells Corp., Hoopeston, Ill., is vice-president.

CONTAINER CORPORATION OF AMERICA recently approved expenditure of substantial sums for extensive modernization and improvement of equipment at two Chicago plants.

HEALTH PRODUCTS CORP., of Newark, N. J., has announced developments of a vitamin D concentrate made from the non-saponifiable fraction of cod-liver oil.

JACOB KINDLEBERGER, president, Kalamazoo Vegetable Parchment Co., has been elected a trustee of Ohio Wesleyan University.

MICHIGAN ALKALI Co., Solid CO_2 division, recently stated, for the benefit of manufacturers planning to purchase equipment using dry ice, that price variations of dry ice are expected to be at a minimum for 1934.

J. F. OECHSLE, 39, consulting engineer, Worthington Pump & Machinery Corp., Harrison, N. J., died recently. He was a founder and later president of Metalweld, Inc., Philadelphia, until that firm was absorbed by Worthington in 1931.

BUSINESS TRENDS

Government Purchases Cut Surplus Butter Stocks

Storage holdings of creamery butter, which showed the huge surplus of 97,000,000 lb. on Nov. 1, will shortly approximate average commercial holdings for the five-year period 1929-1933, according to an announcement of the Department of Agriculture. Purchases to date by the Secretary of Agriculture for the Federal Emergency Relief Administration and projected purchases by the Surplus Relief Corporation will bring under government ownership sufficient stored butter to effect the reduction.

In figures, of 111,210,000 lb. of butter in storage on Jan. 1, 39,932,000 lb. already belongs to F.E.R.A., while 18,011,000 lb. is to be bought by F.S.R.C. as soon as bids are accepted. Thus, government holdings will be nearly 58,000,000 lb., and net commercial holdings about 53,000,000 lb. The latter amount will be but 5,500,000 lb. in excess of the five-year average for 1929-1933, 47,561,000 lb.

All federal emergency relief butter is being purchased for distribution among the needy and unemployed.

BASIS FOR THE CURVES

Retail food prices, factory employment, factory payrolls and wholesale prices are based on indexes of the Department of Labor. Cost-of-living index is that of the National Industrial Conference Board. Electrical power consumption figures are furnished by *Electrical World*.

Foods Strengthen

Butter and egg prices, after drastic declines in December, showed substantial gains with the turn of the year, and remained strong in the first half of January along with grains, coffee and sugar. All commodities reflected confidence in administration currency stabilization policy.

Business activity registered steady but less than expected seasonal gains in January; rises in steel, automobile, electric power and textile production were significant. Industry was busiest since October.

The Business Week Index of business activity stood at 64.6 per cent of normal for the week ended Jan. 13, 2.2 and 4.7 per cent higher than on Dec. 16 and Nov. 18, respectively.

Wholesale prices reported by U. S. Department of Labor for the month ending Jan. 13 advanced 0.9 per cent to 71.7, the three-year peak also reached last Nov. 18. Manufactured foods were 1.2, farm products 2.7 per cent higher than on Dec. 16.

All commodities during the month ended Jan. 13 rose 0.9 per cent in the New York *Journal of Commerce* weighted price index; grain was up 2.7 and food 1.8 per cent.

A. & P. tonnage sales for four weeks ended Dec. 30 were 3.23 per cent less than in the same period, 1932.

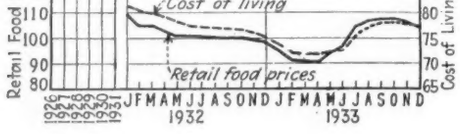
Meat Production Increases Billion Pounds in 1933

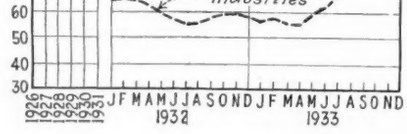
Meat production during 1933 was about one billion pounds, or 7.6 per cent, heavier than during 1932, according to figures of Institute of American Meat Packers. Production of beef increased from 3,940,000,000 to 4,501,000,000 lb., while production of pork increased from 5,696,000,000 to 5,969,000,000 lb. During the latter half of 1933 alone, the production of beef was about 500,000,000 lb. greater than in the corresponding period of 1932, while during November the number of meat animals dressed was about 900,000 more than in November, 1932.

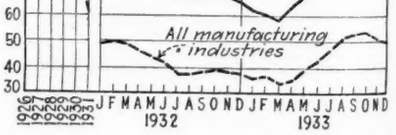
These figures, according to William Whitfield Woods, president of the institute, indicate the reason for the low prices of both livestock and dressed meats.

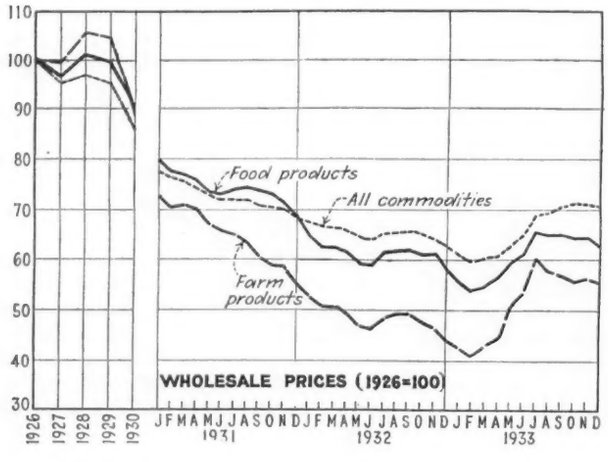
At the same time, government figures show an increase in consumption of 4 lb. per capita, or 5.0 per cent more per person, in 1933 than in 1932.

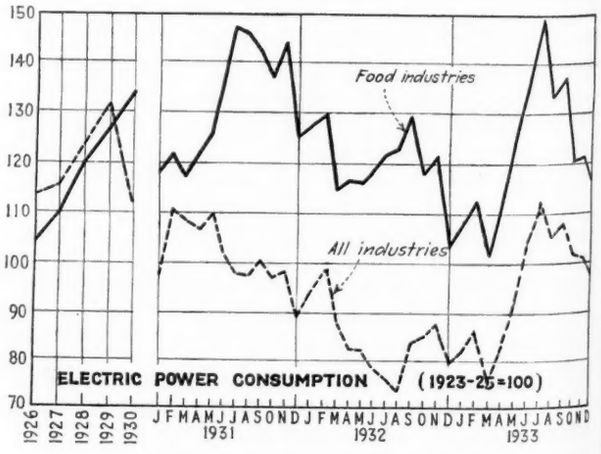
Based on financial reports issued to date, it appears that the average profit of plants operating under federal inspection during the last year was 0.14c. per pound of livestock purchased. During the ten years prior to 1933, companies thus operating and dressing 90 per cent of the livestock entering commercial channels made an average profit of less than one cent per dollar of sales.


RETAIL FOOD PRICES, COST OF LIVING
Retail Food Prices (1913=100)
Cost of Living (1923=100)
Cost of living
Retail food prices
1926 1927 1928 1929 1930 1931 1932 1933









California Pack for 1933 Larger by 41 Per Cent

Fruit and vegetable packs for the State of California during 1933 totaled 23,940,057 cases, 41 per cent, or 7,039,305 cases, more than in 1932. The fruit pack was more than 50 per cent greater than in 1932, totaling 15,424,450 cases, and the vegetable pack was 25.8 per cent larger, totaling 8,515,607 cases. The figures are those of Canners' League of California.

Total pack figures also are larger than those for 1931, but smaller than for 1930 and 1929. Individual figures which swelled the 1933 total fruit pack were those for cling peaches, which showed an increase of 3,830,000 cases over 1932.

Why Dairy Surpluses?

Comparison of production and consumption, January to November, inclusive, tells the story of surplus stocks of dairy products:[1]

Product	Production[3] 1933	Per cent change	Consumption[3] 1933	Per cent change
Creamery butter	1624	+ 3.2	1508	— 3.5
Cheese	472	+ 4.1	484	— 4.5
Condensed milk	186	—15.0	182	—11.9
Evaporated milk[2]	1630	+11.0	1476	+ 3.5

[1]Bureau of Agricultural Economics.
[2]Cases.
[3]Millions of pounds.

Car-Loading Rise Forecast

Shipments of 29 commodities in the first quarter of this year will require 6.5 per cent more freight-car space than in the same period last year, according to the national forecast of Regional Shippers' Advisory Boards. Shipments of citrus fruits; sugar, syrup and molasses; and canned goods are expected to be 6.7, 6.6 and 5.7 per cent heavier, respectively. Grain, fresh fruits other than citrus, livestock, and poultry and dairy products are expected to require freight-car space less than in 1933 by 7.6, 4.3, 2.3 and 1.3 per cent respectively.

Margarin Production Up

Oleomargarine manufacturers during 1933 produced 2,813,198 lb. of colored and 216,229,634 lb. of uncolored oleomargarine, compared with 4,636,218 lb. of colored and 210,706,042 lb. of uncolored oleomargarine in 1932, a decrease of 39.33 per cent and an increase of 2.62 per cent, respectively. Such are the Bureau of Internal Revenue figures.

Salmon Pack Announced

Packs of five varieties of salmon for 1933 will total 6,295,000 cases and be worth $22,090,500, it has been estimated. The total includes packs of Alaskan, Puget Sound and Washington canneries. The pack is expected to meet increased domestic demand to offset recent inroads in European markets made by Japanese and Siberian packers.

Sees Brighter Food Year

Having reversed the downward trend in activity since 1929, the food industries have a brighter outlook for 1934, according to C. M. Chester, president, General Foods Corp. Not only plant employment but also stock dividends were maintained during the last six months of 1933. At the same time, although certain expense items were increased, elimination of uneconomic trade practices through code provisions materially assisted in the recovery.

Boosts Import Quotas

France on Jan. 20 boosted the import quotas on American meat and dairy products to a 100 per cent position, except for salted meats. The quotas are fixed at 10 tons (metric) for frozen pork; 154 tons for salted meats; 8.8 tons for sausages, and 18.8 tons for condensed milk without sugar. These increases cover the recent Franco-American agreement on wines.

France also has decreased the import license tax on apples and pears to one-third that previously announced, this move being the result of American criticism that the proposed tax was prohibitive.

INDICATORS

EXPORT SALES of Pacific Northwest grain in the form of wheat and flour totaled 10,000,000 bu. by Jan. 11. Sperry Flour Co. reports gradually increasing orders from the Orient for wheat and flour.

LIVESTOCK slaughtered in the United States during 1933 was valued at 1½ billion dollars, it is reported, with a daily return to the country through its purchase of $4,000,000.

COLD-STORAGE HOLDINGS of lard, 132,297,000 lb., on Jan. 1 were almost triple what they were on Jan. 1, 1933. Exports for 1933 were 173,000,000 lb. below the five-year average. During 1933 more American than Netherlands lard was sold in Belgium, the American volume amounting to 6½ million lb., more than double the figure of 1932.

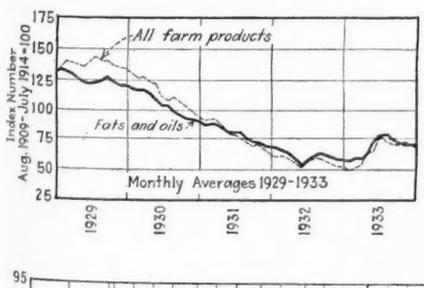
COFFEE IMPORTS into the United States during 1933 are estimated by the New York Coffee and Sugar Exchange to have been 7.5 per cent higher than in 1932.

LIVESTOCK PRICES, according to G. F. Swift, president, Swift & Co., have advanced, per 100 lb., from late 1932 lows, as follows: hogs, 30c; lambs, $2.70; cattle, 60c; and calves, $1.00.

GREEN AND WAX BEANS were packed in 41 and 17 per cent larger quantity, respectively, during 1933 than during 1932.

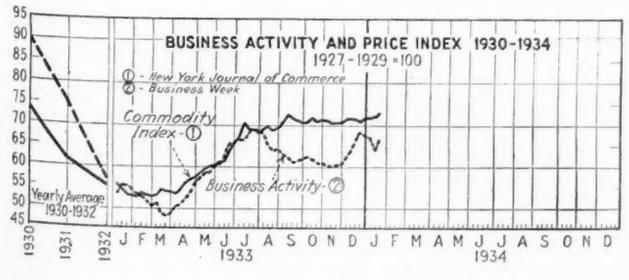
COCOA CONSUMPTION, based on deliveries, is estimated to have increased 9.0 per cent in 1933 over that of 1932.

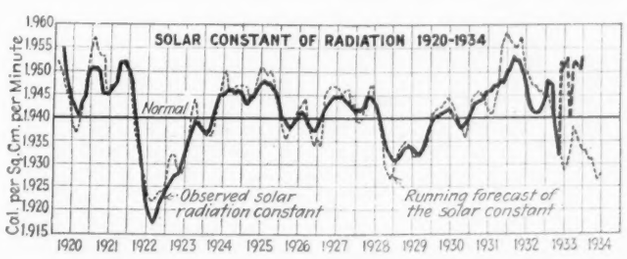
Price Index for Fats and Oils



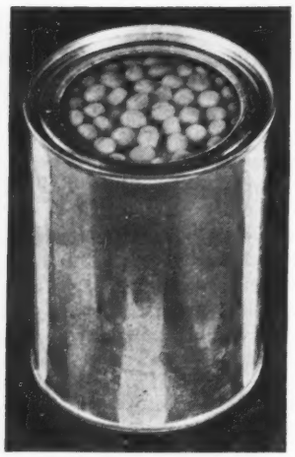
CONSTRUCTION NEWS

	Pending (thousands)	Awarded January (thousands)
Bakery Products	$57	$59
Beverages	1,261	1,591
Canning and Preserving	488	....
Confectionery	60	....
Grain Mill Products	1,275	200
Ice, Manufactured	157	....
Meats and Meat Products	100	68
Milk Products	115	201
Sugar	1,500	....
Miscellaneous	408	....
Total	$5,421	$2,119



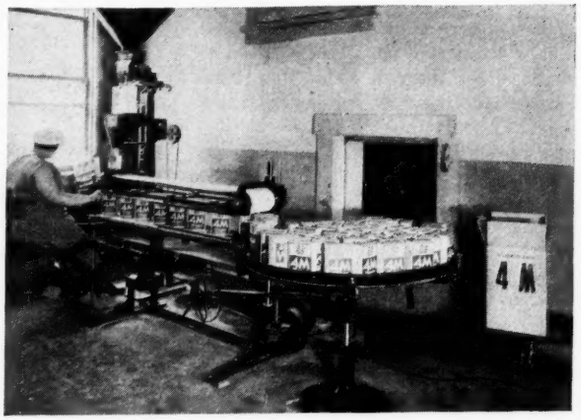


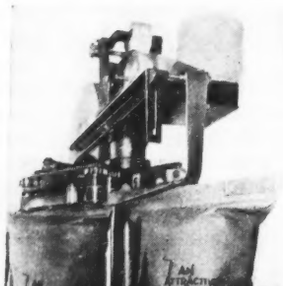
NEW • EQUIPMENT • FOR



Tin Can With Window Of Pyrex in End

No longer will food packed in tin cans have to depend upon fancy labels or auxiliary displays for its "eye" appeal. Continental Can Co., 1 Pershing Square, New York, N. Y., has introduced a No. 2 container with a Pyrex window in the end. The window being almost as large as the can in diameter, the contents may easily be viewed by the prospective buyer. Except for the visual feature, the container does not differ from the ordinary can. It can be closed in the usual manner and adds little to the total processing cost.



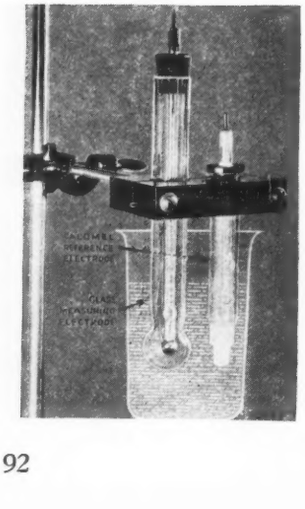


Cloth Bags Closed With Tape Seal

It is not necessary now to sew or tie with wire the ends of paper-lined cloth bags. A new tape seal has been developed by Bemis Bro. Bag Co., 601 South Fourth St., St. Louis, Mo. This consists of a cemented strip applied by machine over the open end of the bag. The bags come from the filling and weighing machine on a conveyor to the sealing machine. The top of the bag slides through guides which hold the material erect so that the top is pressed together in a straight line. At the same time, the sealing tape, coated with cement and crimped into an inverted V shape, folds over the full length of the bag top. As the bag moves on, the top, with the tape in place, passes between rollers which apply heavy pressure. The sealed mouth of the bag is flat, making it wider than the lower portion and providing "ears" for convenient handling. The new closure is waterproof and siftproof. The cement sets instantly, and the bags can be handled as soon as they are closed. Four to six bags are sealed per minute. The operator uses a foot control, leaving his hands free.

Cap Tightener

To enable employees in bottling plants to tighten caps properly and at the same time protect their hands from cuts, John D. McIntyre, 52 Cedrus Ave., Roslindale, Boston, Mass., has devised a tool that fits the operator's hand. It consists of a vacuum cup mounted in a wooden handpiece. Made in three sizes for caps up to 18, 24 and 38 mm., respectively, the tool will tighten all types of caps that require turning.



Glass Electrode For pH Measurements

What is said to be the only satisfactory electrode for making pH measurements in oxidizing and reducing solutions and also in unbuffered ones has been placed on the market by Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia, Pa. This electrode consists of a glass electrode membrane between two standard reference potentials, one a saturated calomel electrode and the other a quinhydrone electrode in a 1 pH solution of HCl. The glass electrode membrane functions as a hydrogen electrode, and it is the hydrogen-ion equilibrium at this glass interface that gives a potential which is a function of the pH value. This electrode is used with an ordinary potentiometer and with a reflecting galvanometer of moderate sensitivity. The L.&N. glass electrode has a range of zero to 12.5 pH and a limit of error of 0.1 pH. Its only practical limitations are that the solution should not be over 0.1 molar in sodium or potassium ion and that it should be reasonably free-flowing and free from suspended heavy solids. Need for temperature correction is eliminated by immersion of the calomel electrode in the solution under test.

Magnetic Separator

Equipped with corrugated auxiliary magnets, the magnetic separator manufactured by Patterson Foundry & Machine Co., East Liverpool, Ohio, sets up a high intensity magnetic flux in the liquid passing through it. The auxiliary magnets protrude from heavy main magnets and their corrugations provide a large number of edges and points which act to intensify the magnetic flux. The separator is housed in a sealed aluminum case with an automatic aluminum discharge trough which tilts back when the current is cut off and prevents unclean liquid from passing through. The unit operates at 115 or 230 volts d.c., and is built in sizes of 500 to 2,500 watts.

Caps With Color

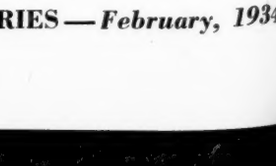
Private designs, trademarks or monograms may be reproduced in full color on the top of a molded cap introduced by Armstrong Cork & Insulation Co., Lancaster, Pa. The design on these Medallion Artmolds is reproduced on a disk, or medallion, inset in the top of the molded cap. The caps illustrated are maroon; the background of the medallion also is maroon and the four-pointed figure is in gold with a white dot in the center.

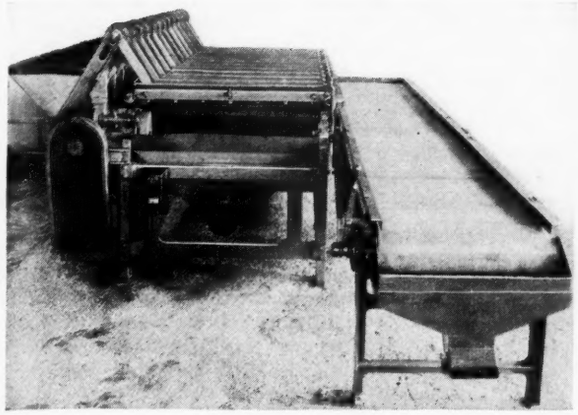
High-Speed Hand Packager

One operator can set up cartons, seal the bottoms, fill them, seal the tops and pack them in cases at a rate of 3,000 a day with the Economy Packager placed on the market by Triangle Package Machinery Co., 906 North Spaulding Ave., Chicago, Ill. This packager consists of a filling machine (a power-feed net weigher), a set of rolls which apply glue to the flaps, and a double-belt conveyor which puts pressure on the cartons while the glue is setting. At the end of the conveyor is a power-driven collector table that will accumulate 125 packages. This machine will package all kinds of powdered or granulated material. It will handle cartons containing as little as 1 oz. and as much as 5 lb. The machine may be adjusted quickly for different size cartons.

Dough Molder

Hardened and ground alloy steel rolls, the surfaces of which are very close grained and highly polished, are used in the new Model LA molder introduced by Thomson Machine Co., Belleville, N. J. These rolls form the dough into a smooth, thin strip without tearing it. And little dusting flour is required, the manufacturer states. Close-fitting adjustable scrapers clean the rolls continuously and prevent scrapping. An adjustable apron makes it possible to run any weight piece of dough through the machine. A solid flange drum, used for safety, is another feature. Built for small and medium-sized wholesale bakeries, this molder is designed for heavy-duty service and made to sell at a low price. The machine is built in sizes from 4 to 10 in. with capacities up to 3,000 loaves per hour.





Removes Stems From Strawberries

Stems and caps are removed from strawberries with a machine developed by Fay & Scott, Dexter, Me. The capping mechanism consists of a series of perpendicular corrugated rubber belts on top of which is operated a fluted stainless-steel roll driven by contact with the belts. This contact forms the "bite" which caps the berries. Adjacent to the "bite" runs a V-shaped, inclined conveyor belt; the position of this belt is adjustable for large and small berries. Being tumbled as they travel along this belt, the berries will, at some point, occupy such a position that the stem, or cap, is caught and removed. This action is assisted by jets of water which buffet the berries and at the same time wash them. The caps and stems are pinched off, without mutilation, the manufacturer reports, and the capper roll is sufficiently small that it will not draw the berries in. The capper illustrated comprises twelve feeding and capping units driven from one shaft, each unit being self-contained and individually controlled by a clutch. Operated by one man, this machine has a capacity of twelve quarts per minute. It is driven by a 3-hp. motor; it occupies 150 sq.ft. of floor space.

The Manufacturers • • Offer • •

Coffee Grinders — Granulizers with patented corrugated rolls and other coffee processing equipment. B. F. Gump Co., 431 South Clinton St., Chicago, Ill. Booklet, 15 pp.; illustrated.

Air Conditioning—The "Lustr Koold" method, for the confectionery plant. Economy Equipment Co., Inc., Chicago, Ill. Booklet, 7 pp.; well illustrated.

Spices—Individual and blended dry essences; directions for curing. William J. Stange Co., Chicago, Ill. Booklet, 59 pp.; bound in red imitation leather.

Trailers—The many styles of bodies available. Fruehauf Trailer Co., 10940 Harper Ave., Detroit, Mich. Pictorial folder spread, 36x24 in.

Chemicals—R & H quarterly price list. E. I. duPont de Nemours & Co., Inc., Wilmington, Del. Booklet, 32 pp.

Research—The Merck report, Vol. 43, No. 1, for January, 1934. Merck & Co., Inc., Rahway, N. J. Booklet, 22 pp.; well illustrated.

Motor Bases—Standard, ceiling, vertical and small motor bases. Rockwood Mfg. Co., Indianapolis, Ind. Four illustrated leaflets.

Ammonia Compressors — Duplex vertical type, as used in combined units. Carbondale Machine Co., Carbondale, Pa. Booklet, 7 pp.; well illustrated.

Stainless Steel — For use in dairy equipment. National Tube Co. and American Sheet & Tin Plate Co., Pittsburgh, Pa. Bulletin No. 24, 15 pp.; well illustrated.

Dairy Equipment — Cold-hold tanks and the ammonia agitator-cooler, for storing liquid products. Creamery Package Manufacturing Co., 1243 West Washington Blvd., Chicago, Ill. Bulletin B-226, 8 pp.; illustrated.

Glass — Sheets, sight glasses and oven-door panels. Corning Glass Works, Corning, N. Y. Bulletin 801, 7 pp.; illustrated.

Packaging — "How to Pack Wines and Liquors." Hinde & Dauch Paper Co., Sandusky, Ohio. Booklet, 15 pp.; very well printed and illustrated.

Couplings — Flexible connections of the sprocket-chain type. Link-Belt Co., 220 South Belmont Ave., Indianapolis, Ind. Booklet, 15 pp.; illustrated.

Compressors — Feather valve, motor-driven compressing machinery. Worthington Pump & Machinery Corp., Harrison, N. J. Booklet, 27 pp.; well illustrated.

Heaters—Midget electric heating units. General Electric Co., Schenectady, N. Y. Booklet, 14 pp.; ingeniously printed and illustrated.

Casing—History of and facts about Visking. Visking Corp., 6733 West 65th St., Chicago, Ill. Booklet, 31 pp.; very well printed and illustrated.

Tanks — For storing, aging and trucking. York Ice Machinery Corp., York, Pa. Illustrated leaflet.

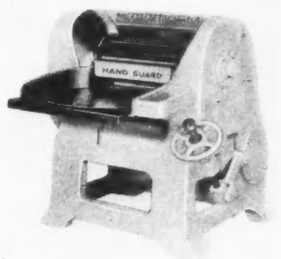
Iron Pipe—Toncan manufacture, applications and performance. Republic Steel Corp., Youngstown, Ohio. Booklet, 24 pp.; well printed and illustrated.

Facilitates Stuffing Of Frankfurters

To simplify the stuffing of "skinless" frankfurters, Visking Corp., 6733 West 65th St., Chicago, Ill., has developed a new package for its casings. Furnished in lengths of 32 ft., these casings are compressed into a four-sided pasteboard box, approximately 6 in. long, and a perforated pasteboard loop holds the casing in place. To apply, the package, with the perforated side of the loop up, is slipped over the horn. The loop is then removed and the box lifted upward and off, as shown in the illustration. Notches in the ends of the box permit it to slip off the horn.

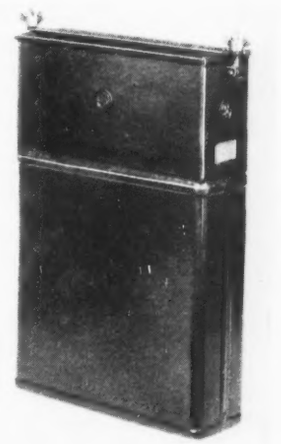
High-Speed, Beltless Dough Brake

There are no canvas belts to become saturated and unclean in the high-speed dough brake introduced by J. H. Day Co., Cincinnati, Ohio. The entire sheeting action takes place between metal rolls, and an extra sheeting of the dough is obtained by an auxiliary roll used to provide automatic return of the dough. Also, there is little danger of the operators getting a hand caught in the rolls, because the bottom sheeting roll has been placed partly behind the top one. Built with an inclosed one-piece frame, the dough brake has rigidity and requires little floor space. The machine is built in two sizes, with 8x20-in. and 8x26-in. rolls. It is regulated by an automatic pushbutton control.



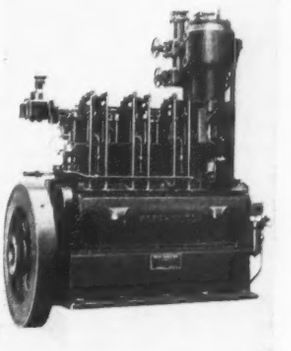
Dustproof Capacitor

Designed for grain mills and other plants where dust is prevalent, a totally inclosed capacitor announced by General Electric Co., Schenectady, N. Y., is treated and filled with Pyranol. This substance is non-inflammable and is said to have extraordinary insulating and dielectric properties. In addition, it makes possible a capacitor of small size and weight. The capacitor dielectric is hermetically sealed, connections being brought out through bushings into a dust-tight box surrounding the unit. The box is provided with conduit holes, each fitted with a dust cap, and contains standard N.E.C. indicating fuses.



Unibloc Compressor For Ammonia

High efficiency and compactness have been obtained in "Unibloc" diesel- and gas-engine compressors made by Worthington Pump & Machinery Co., Worthington and Harrison Aves., Harrison, N. J. In these units, a compressor cylinder is mounted directly on the base of a standard Worthington vertical four-cycle engine. The piston of one power cylinder is replaced by a crosshead connected by a piston rod to the compressor piston directly above it. The four-cylinder unit illustrated has three power cylinders and one ammonia cylinder, with the power cylinders so arranged that it becomes a standard three-cylinder engine. To give balance, the compressor crank is equipped with counterweights.



These vertical machines operate at full speed, but the speed of the compressor piston is kept down to about 675 ft. per minute, which is within the limit for ammonia. This is accomplished by making the crank throw for the compressor cylinder shorter than that for a power cylinder. The claim for high efficiency is based upon low mechanical friction, placing of the suction valve in the top of the piston and use of the "feather" valve, which is adaptable to high-speed operation.

WHAT'S ON YOUR MIND?

A Farmer on Farm Relief

To the Editor of FOOD INDUSTRIES:

Well, what do you think of N.R.A. by this time? It sure is working a hardship on the small business of the country, and the farm program is hitting the small farmer in favor of the large farmer. Take the wheat reducing program. We small farmers can't reduce our acreage. We only have a few acres to farm every year and we can't raise enough feed to make anything at the prices we get, even when we farm all we have and rotate our fields, as we must to keep our land up.

I have 25 September pigs and have to buy shorts to slop them. Up to now I have paid $4.50 government tax on what feed I have bought since Oct. 15. That $4.50 comes off of me, to help the government pay the wheat farmer who farms on a big scale so he can reduce his acreage.

The same thing is true with corn acreage. I have only 12 acres for corn and have 3 brood sows. If I reduced my corn acreage I would have to buy corn to feed, and I have no money to buy it with.

And this processing tax the government has on hogs is hurting the price of hogs. This month the tax is $1 a hundredweight; January, $1.50; and February, $2. Hogs at Indianapolis are going down 10 and 15 cents a hundred every day, and now are down to $2.75 to $3.40 a hundred.

Stock hogs like I have to sell are no price at all. Thursday, at the sale barn in ——— pigs weighing 75 to 90 lb. sold for 75 cents each, and pigs weighing 100 to 125 lb. brought $1.10 per head. Brood sows weighing 200 lb. with eight nice pigs brought $5.25 for sow and pigs—so you see my situation.

On top of that, the feed is high. Last year I bought shorts for slop for 80 cents a hundred and this fall I paid from $1.40 to $1.60 per hundred. Bran cost me 70 cents last year and this year $1.10 to $1.20 a hundred.

Last year I bought work gloves at 85 cents a dozen and this year I pay $1.25. Twenty-five-cent work shirts cost me 49 cents now. Overalls have gone up from 79 cents to $1.15.

Last spring I sold 80-lb. pigs for $4 a hundred. Now an 80-lb. pig brings 75 cents a head. Does that look to you like prosperity for a farmer?

There are eight different taxes on wheat from the time the farmer sells it till it gets back to the consumer. In the spring, the assessor takes in hogs for taxation. Then when we sell them, if they bring over a certain amount, there is a sales tax on them; and when they got to the yards a process tax is on them; and nobody here knows what next. The butchers say the people are not buying pork but have turned to beef and mutton and ducks and chicken.

Did you ever read of a nation taxing themselves into prosperity? I sure wish we had some good business men at the head of this government.

B. F. F.

Air Intake at Top of Boiler

To the Editor of FOOD INDUSTRIES:

I have a few comments to make concerning Mr. Pef's idea in your Ideas from Practical Men section, October issue of FOOD INDUSTRIES.

Regarding the increase in boiler efficiency to be gained by using warm air from the top of the boiler as combustion air, while Mr. Pef's idea is fundamentally sound in that the heat lost from the boiler setting is partially recovered and used to preheat the air for combustion, the explanation for the gain in efficiency is very indefinite.

The article states that there is a gain in efficiency of nearly 1 per cent for every 25 deg. F. increase in the flue-gas temperature. The term flue-gas temperature is commonly used to identify the temperature of the boiler-outlet gas, and if used to identify any other temperature in the boiler-gas path, becomes a rather indefinite term.

If the flue-gas or boiler-outlet-gas temperature is increased, the losses from this source are increased. In the well-operated plant every precaution is taken to keep the temperature of the flue gases as low as is commensurate with complete combustion of the fuel. This is accomplished by reducing the air supplied for combustion to a practical minimum.

The reason for the increase in efficiency noted by Mr. Pef is the partial recovery of the heat lost from the boiler setting and returning this heat to the furnace as preheated combustion air. Preheated air increases the temperature of the gases formed by combustion of the fuel, so that a higher heat-transfer rate through the boiler metal takes place during the passage of these gases through the boiler.

In addition to this, preheated air will in the majority of cases result in higher combustion efficiency, due to a number of factors, and will in some cases cause a reduction in the flue-gas temperature.

S. H. COLEMAN
649 Walnut Ave.
Waynesboro, Va.

To the Editor of FOOD INDUSTRIES:

In my article referred to by Mr. Coleman I described the case of a power plant in which the fuel consumption was decreased by 2 per cent when a metal duct was run from the forced-draft-fan inlet to the top of the boiler, where the temperature of the air was approximately 50 deg. higher than the temperature at the level of the fan.

For estimating purposes it is the usual practice to assume 1 per cent increase in efficiency for each 25 deg. decrease in the flue-gas temperature, but the exact relation is expressed by the following equation:

$$E = \frac{0.24 \times W \ (T_1 - T_2)}{\text{B.t.u.}}$$

where E is the incremental increase in efficiency, 0.24 the specific heat of the flue gasses, W the weight of air used per unit weight of the fuel, $(T_1 - T_2)$ the change in flue-gas temperature and B.t.u. the heating value of the fuel per unit weight. If we assume 20 for W—namely, 20 lb. of air per pound of coal, which is about right for average conditions—and 1,200 B.t.u. for the heating value, the value of E is 1 per cent when $(T_1 - T_2)$ is 25 deg.

The arrangement described in my article takes the place of a preheater on a small scale. Preheating the air for combustion is relatively new in boiler-room operation, having made its appearance in post-war days, and by this time it is in more or less general use. While the partial recovery of the sensible heat of the gases is the primary purpose of a preheater, this is not the entire benefit derived therefrom. One of the boiler losses is that due to incomplete combustion and which is often indicated by smoking stacks.

Preheated air reduces smoke together with the loss that accompanies it and, although the results in this respect cannot be measured accurately, it is accepted that there is a benefit. The 2 per cent mentioned in my article is that due to the sensible heat of the gases and does not include the gain due to better combustion.

In boiler operation, as Mr. Coleman observes, the objective is to keep the flue-gas temperature as low as is possible under the operating conditions. On this point often there is considerable confusion due to a lack of understanding as to when the flue-gas temperature is right. There are many boilers being operated with a flue-gas temperature of 600 deg., which is too high, and other boilers with a temperature of 800 deg., which is about right. The limiting conditions of the flue-gas temperature are the operating pressure and the rate of

driving. It is considered good practice if the flue-gas temperature is 100 deg. above the saturated steam temperature, corresponding to the operating pressure with the rate of driving at 100 per cent. For higher ratings, the temperature increases at 1 deg. per 1 per cent of increase in load. For example, if the operating pressure is 150 lb., the flue-gas temperature should be 500 deg. at 100 per cent load and 550 deg. at 150 per cent load.

If the temperature is higher than that indicated by the method just described, this is due to controllable influences which can and should be corrected. Those most commonly found are: (1) tubes covered with soot on the outside; (2) tubes covered with scale on the inside, which probably is due to incorrect water treatment; (3) leaky baffles; (4) a too high per cent of excess air.

The last item mentioned is the most formidable enemy of boiler efficiency. The U. S. Bureau of Mines estimates that the average boiler room has a preventable loss of over 25 per cent, and the major portion of this is due to excess air. Aside from its effect in increasing the flue-gas temperature, excess air is a heavy loss in itself. In fact it is the principal loss in the burning of fuels, and in the average plant it is greater than all other losses combined.

When coal is burned efficiently, the quantity of air is about 10 to 15 lb. per pound of coal. The use of more air than this is an unnecessary loss. The correct quantity of excess air corresponds to 10 to 12 per cent of carbon dioxide, and the most acceptable as well as the most reliable and correct way of adjusting the air is through the use of a CO_2 machine. This apparatus has been developed to a high degree of perfection and the indicating and recording models are now the standard equipment of all recently built plants, while the hand-operated type could be well afforded even by the smallest boiler room.

N. T. Pef,
1052 East 75th St.,
Chicago, Ill.

Multiple-Unit Bag Opener Speeds Packaging

(Concluded from page 63)

other important part of the design are the wires soldered across the two bottom corners of the holder, at the front. These hold the bottoms of the bags in place until the product is inserted, when they permit the bag to fall through to the conveyor below.

The bags are supported in the holder by a $\frac{3}{4}$-in. flat steel spring located midway between the sides of the box and fastened at the bottom by a small bolt. The upper end of the spring presses the "floating" plate against a stop, and the long sides of the bags are inserted between the plate and the stop. A thumbscrew that turns through a nut soldered to the back of the box provides adjustment for spring tension to give desired pressure on the bags.

The bottom of the floating plate is pushed forward by two $\frac{1}{4}$-in. flat steel springs, one on each side of the $\frac{3}{4}$-in. spring. The upper ends of these springs are soldered to a shoulder which in turn is soldered to the top of the holder.

Each of the holders is suspended from a 2-in. sanitary pipe that is connected to the blower at the center and which acts as a common air duct for all the holder nozzles. The holders are spaced at intervals of 20 in., the machine described here having four and using three operators. This system permits the operator to work at another holder when the one she is using runs out of bags.

The blower is of the turbine type, the impeller being about 5 in. in diameter. It is driven by a $\frac{1}{30}$-hp. motor rated at 110 volts and 13 amp. The blower creates very little pressure, but it will deliver a large volume at low pressure. The blower, motor and the common 2-in. duct are all supported by an angle-iron frame which in turn is bolted to the conveyor with which the machine is used.

For the best speeds in packaging, the bag opener should be used with a two-belt conveyor, one belt bringing the product to the machine and the other taking away the filled bags. A conveyor of this type which uses a 6-in. belt for the product and a 12-in. belt for the filled sacks is shown in Fig. 1.

The bag opener used at Borden's, aside from being inexpensive, has the advantage of being a flexible, self-contained unit. It is easily cleaned; it may be moved from one conveyor to another; and it permits the addition of more opening units to the blower conduit as needed.

Where the Processing Tax Fails

(Concluded from page 62)

is a growing belief that processing taxes on non-perishables are likewise a tax on the producer, although the effect is not so instantaneous.

It would be folly to say that no good can ever be accomplished by collecting the tax, whoever it comes from, for it is very probable that the corn-hog curtailment program will be carried out after a fashion, no matter if the farmer does pay the tax to himself.

Nothing could be more ridiculous, however, than the recent statement by Congressman Henry T. Rainey, who complains that the meat packers are defeating the very purpose of the A.A.A. and declares that the A.A.A. will have to commandeer the packing plants to be sure that the farmer gets a square deal. Let Mr. Rainey and all other well-meaning innocents be assured that if the government took over every slaughter house in the country, it could not get one cent more for meat than the public is willing to pay. And that is all that private ownership can do.

Whether the perishable is meat, milk, poultry or fish, apples or other fruits, there is not a Chinaman's chance of putting on a processing tax and taking it out of the consumer. As long as the consumer can exercise a free choice (and the consumers' council of A.A.A. is most solicitous on this point) the producer will pay the processing tax, not the consumer.

In spite of the high zeal which motivates some parts of the Department of Agriculture, it seems rather unlikely that the A.A.A. will authorize the employment of gunmen to compel the consumer to pay the processing tax. Yet the only way to say "must" is to kill!

Copeland Bill to the Rescue

(Concluded from page 72)

not less than 30 days after the date of such notice. After such public hearing the Secretary is authorized to formulate and promulgate such regulation, but no such regulation shall be promulgated without the approval of at least three members of the committee. The regulation so promulgated shall become effective on a date fixed by the Secretary, which date shall not be prior to 90 days after its promulgation, and may be amended or repealed in the same manner as is provided for its adoption: *Provided,* That regulations setting up exemptions pursuant to Sec. 8, Par. (d), and Sec. 9, Par. (c) may be promulgated without notice or hearing and shall become effective at such time as the Secretary determines.

(e) The term of office of members of the Committees provided by Pars. (b) and (c) of this section shall be five years, but the terms of office of the members first appointed shall expire at the end of one, two, three, four, and five years, as shall be designated by the President in their respective appointments. In appointing members to the committees the President shall designate the chairman. No person who is a member of the Department of Agriculture or who has a financial interest in the manufacture, advertising, or sale of any food* shall be eligible to appointment to either committee.

(f) Each committee shall convene at least once each year in the city of Washington at a time to be designated by its chairman, but action by either committee under this section may be taken by the members thereof acting individually without convening in meeting. In each case in which approval by either committee of a regulation is required under this section, the Secretary shall transmit to each member of such committee a transcript of the record of the public hearing held by him. Members of the committee shall be given due notice of, and may sit with the Secretary or his representatives at, all such public hearings relating to the functions of their respective committees. Each committee on its own motion or at the request of the Secretary may advise him of its views on any question concerning the enforcement of this Act.

(g) The Secretary of the Treasury and the Secretary of Agriculture shall jointly prescribe regulations for the efficient enforcement of the provisions of Sec. 20. Such regulations shall be promulgated in such manner and take effect at such time as the Secretary of Agriculture shall determine.

(h) Hearings authorized or required by this Act shall be conducted by the Secretary or such officer or employee as he may designate for the purpose. In formulating regulations under Pars. (b) and (c) of this section, the findings of fact by the Secretary shall be conclusive if in accordance with law.

COURT REVIEW OF REGULATIONS

SEC. 23. The district courts of the United States are hereby vested with jurisdiction to restrain by injunction, temporary or permanent, the enforcement by any officer or employee of the Department of Agriculture of any regulation promulgated as provided in Sec. 23 [sic][1] if it is shown that the regulation is unreasonable, arbitrary, or capricious, or not in accordance with law, and that the petitioner will suffer substantial damage by reason of its enforcement: *Provided,* That the foregoing shall not be deemed to abridge the right of any person against whom a criminal prosecution or suit for injunction shall have been brought under this Act or who shall intervene as claimant in any proceeding of libel for condemnation to plead that the regulation whose violation is alleged as the ground for such prosecution, suit, or libel, is invalid.

SEPARABILITY CLAUSE

SEC. 24. If any provision of this Act is declared unconstitutional, or the applicability thereof to any person or circumstances is held invalid, the constitutionality of the remainder of the Act and the applicability thereof to other persons and circumstances shall not be affected thereby.

EFFECTIVE DATE AND REPEALS

SEC. 25 (a) This Act shall take effect six months after the date of approval. The Federal Food and Drugs Act of June 30, 1906, as amended (U.S.C., Title 21, Secs. 1-15), shall remain in force until such effective date, and, except as otherwise provided in this paragraph, is hereby repealed, effective upon such date: *Provided,* That upon the approval of this Act and before its effective date the Secretary is authorized to conduct hearings and to promulgate regulations under the provisions hereof which shall become effective on or after the effective date of this Act as the Secretary shall direct: *Provided further,* That the Act of March 4, 1923 (U.S.C., Title 21, Sec. 6; 42 Stat. 1500, Ch. 268), defining butter and providing a standard therefor, and the Act of July 24, 1919 (U.S.C., Title 21, Sec. 10; 41 Stat. 271, Ch. 26), defining wrapped meats as in package form, shall remain in force and effect and be applicable to the provisions of this Act.

(b) The provisions of this Act shall not be held to modify or repeal any of the existing laws of the United States except as provided by Par. (a) of this section.

*Also drugs or cosmetics.

[1]Evidently Sec. 22 is meant.—EDITOR.

How Continuous Boiling Eliminates Drying Problems

(Concluded from page 54)

This new method of heat application, here called continuous broiling, has proved to be a great improvement over continuous frying, not because anything is wrong with frying as an operation but because of the character of the oil within the fish and the problems arising from it. In the frying method of heat application, the heat transfer is by means of conduction and convection. The broiling method utilizes radiation and conduction and marks an important advance in the technology of packing California sardines, for it has resulted in a great improvement of the product.

It is a pleasure to acknowledge the cooperation and kindness of F. E. Booth, president of the company which bears his name, for permission to describe this unit operation.

Definitions and Standards For Food Products

(Concluded from page 79)

fruit, or a mixture of two or all of these, with sugar or with sugar and dextrose with or without water. In its preparation not less than 45 lb. of fruit are used to each 55 lb. of sugar or of sugar and dextrose. A product in which the fruit is whole or in relatively large pieces is customarily designated a "preserve" rather than a "jam."

10. Jelly, fruit jelly, is the semi-solid, gelatinous product made by concentrating to a suitable consistence the strained juice or the strained water extract fro[m] fresh fruit, from cold-pack fruit, fro[m] canned fruit, or from a mixture of two or of all of these, with sugar or with sugar and dextrose.

11. Glucose fruit preserve, corn syrup fruit preserve, glucose fruit jam, corn syrup fruit jam, is the product made by cooking to a suitable consistence properly prepared fresh fruit, cold-pack fruit, canned fruit, or a mixture of two or all of these, with glucose or corn syrup. In its preparation not less than 45 lb. of fruit are used to each 55 lb. of glucose or corn syrup.

12. Glucose fruit jelly, corn syrup fruit jelly, is the semi-solid, gelatinous product made by concentrating to a suitable consistence the strained juice or the strained water extract from fresh fruit, from cold-pack fruit, from canned fruit, or from a mixture of two or of all of these, with glucose or corn syrup.

13. Citrus fruit marmalade is the jelly-like product made from the properly prepared peel and juice, with or without the pulp, of citrus fruit, with sugar or with sugar and dextrose, by cooking with water. It contains, embedded in the mass, pieces of the fruit peel.

14. Apple butter is the semi-solid product obtained by cooking to a suitable consistency the strained edible portion of apples with sugar and/or dextrose, with or without one or more of the following: Apple juice, boiled cider, spice, salt. In its preparation not less than five parts by weight of the strained apples used to each two parts by weight of sugar and/or dextrose. The product has a characteristic apple flavor and is commonly spiced.